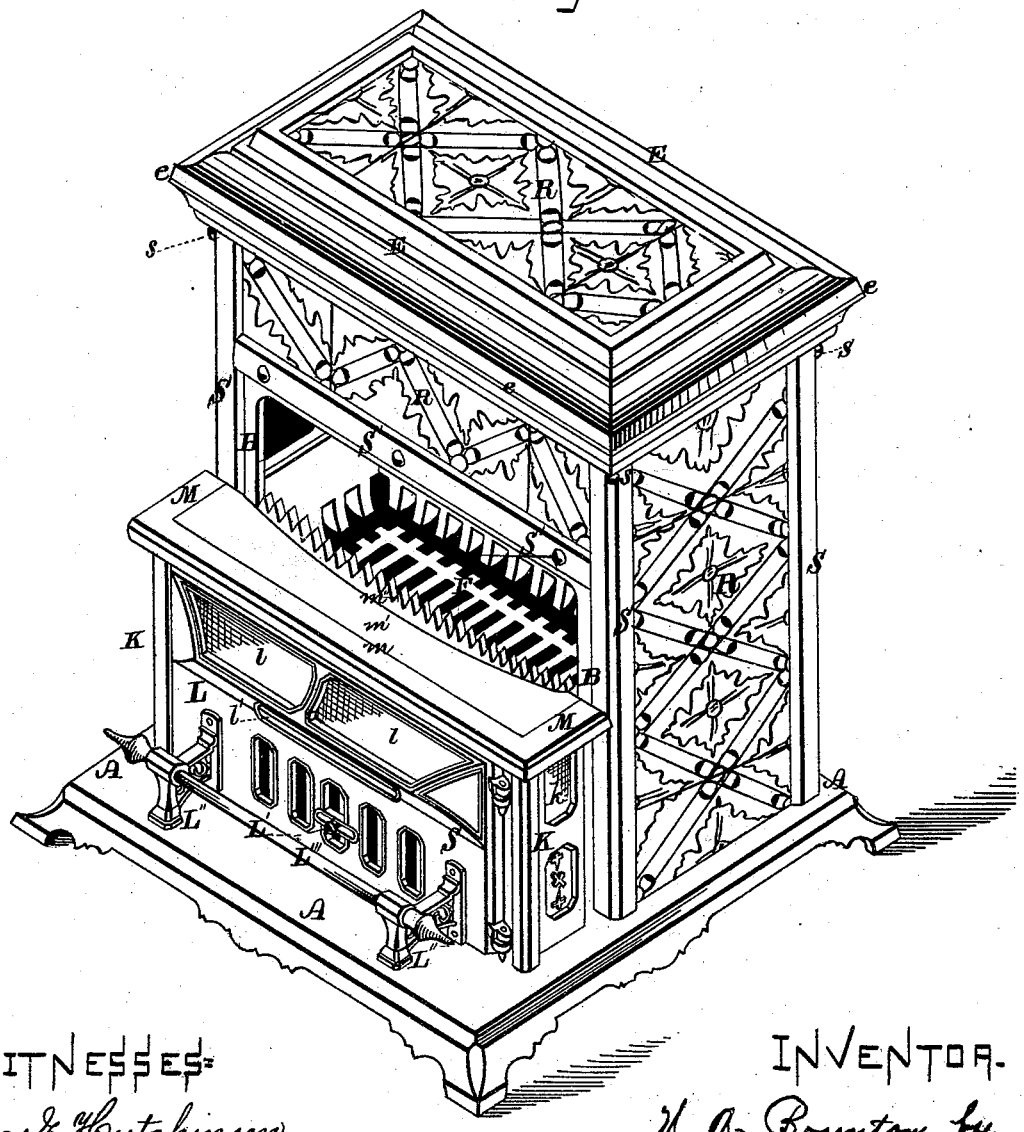
3 Sheets—Sheet 1.

N. A. BOYNTON.

Heating-Stoves.

No. 197,819. **Patented Dec. 4, 1877.**

Fig. 1.



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3 Sheets—Sheet 2.

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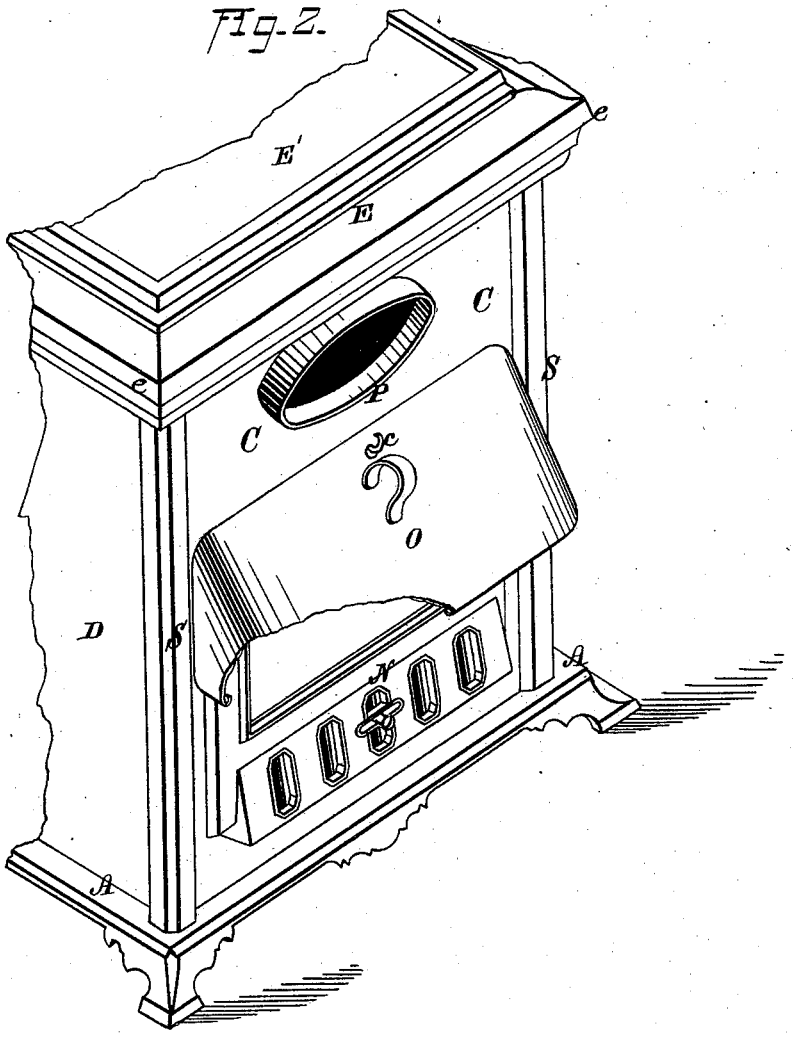
Fig. 2.



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N. A. BOYNTON.

Heating-Stoves.

No. 197,819. **Patented Dec. 4, 1877.**

Fig. 3.

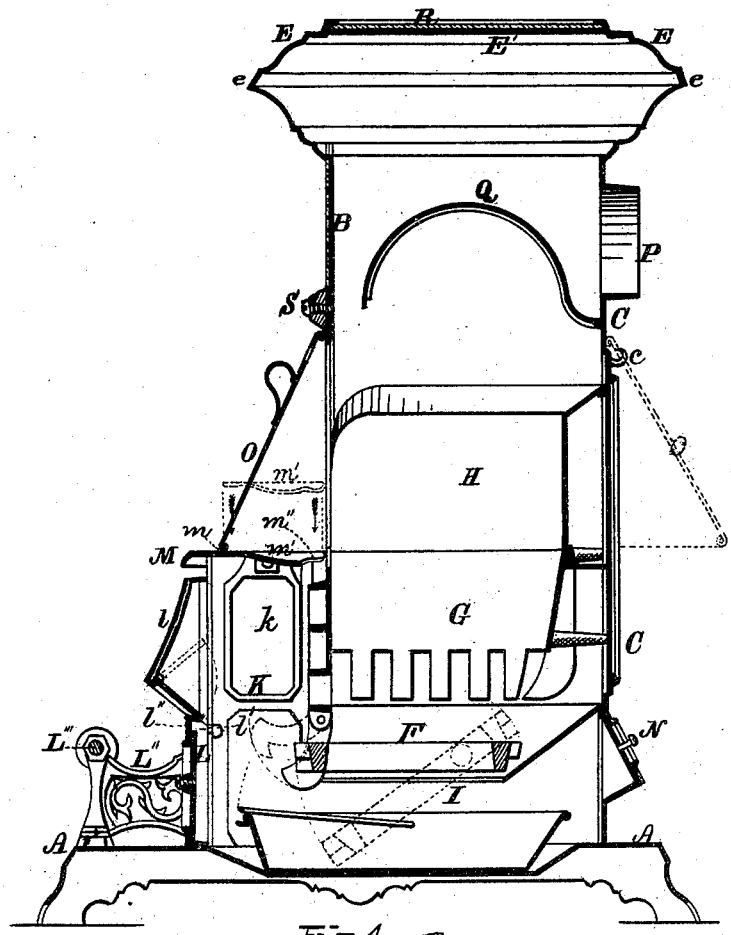
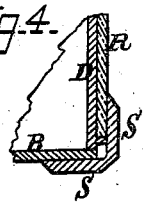


Fig. 4.



WITNESSES=

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UNITED STATES PATENT OFFICE.

NATHANIEL A. BOYNTON, OF NEW YORK, N. Y.

IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. **197,819**, dated December 4, 1877; application filed August 11, 1876.

To all whom it may concern:

Be it known that I, NATHANIEL A. BOYNTON, of New York city, in the county of New York, and in the State of New York, have invented certain new and useful Improvements in Heating-Stoves; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of my improved stove as arranged for use, the blower being removed. Fig. 2 is a like view of the rear side of said stove, and shows the blower in the position which it occupies when not in use. Fig. 3 is a vertical section upon a central line passing from front to rear; and Fig. 4 is a horizontal section of one side of said stove, and shows the means employed for securing the tiled exterior in place.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to increase the beauty, efficiency, and healthfulness of heating-stoves which have open fuel-chambers; and to this end it consists, principally, in combining with the door of the ash-pit a fender, which is supported by and moves with said door, substantially as and for the purpose hereinafter set forth.

It consists, further, in a hot-air-chamber extension in front of the ash-chamber and the grate which incloses the front side of the fuel-chamber, substantially as and for the purpose hereinafter shown and described.

It consists, further, in the employment of glazed light-openings within the ends of said hot-air chamber, substantially as and for the purpose hereinafter specified.

It consists, further, in inclosing the upper open side of said hot-air chamber with a removable hearth, between the inner edge of which and the front side of the grate is left an open space, substantially as and for the purpose hereinafter shown.

It consists, further, in the employment of a supplemental draft-damper, located in rear of the ash-pit, substantially as and for the purpose hereinafter set forth.

It consists, further, in combining with the combustion-chamber and exit-flue a deflecting-plate, constructed in the manner and for the purpose substantially as is hereinafter shown and described.

As seen in the annexed drawings, my stove has a general rectangular shape, and is composed principally of a base-plate, A, front and rear plates B and C, end plates D and D, and top plate E, the latter being provided with an ornamental molded edge, *e*, which projects outward and extends downward, as shown.

The front plate B is open from the base-plate A to a point about one-fourth its height from its upper end, and within the space thus exposed is placed a grate, F, which incloses a fuel-chamber, G, while above and below said grate are formed, respectively, a combustion and an ash chamber, H and I.

From the base-plate A upward, nearly to the upper edge of the grate F, the side walls D are extended forward a distance equal to about one-half their width, and form a chamber, K, which, at its front side, is provided with a door, L, that is hinged at one end, and is capable of being swung away from, or caused to inclose, said opening, as may be desired.

The upper side of the chamber K is provided with a projecting plate, M, within which is an opening, *m*, that corresponds in size and shape to the interior of said chamber at such point, and is inclosed by means of a removable plate or hearth, *m'*, that closely fills said space, except at its inner side, where, between said hearth and the front of the grate F, is left an opening, *m''*.

The upper side of the hearth *m'* inclines downward and inward, so as to cause dust or ashes falling thereon to slide to and fall through the opening *m''* into the ash-chamber I.

The upper portion of the door L has an outward swell, as seen in Figs. 1 and 3, and within such portion are provided mica windows *l*, through which light and heat from the front of the grate F may be transmitted. Mica windows *k* are also provided within the ends at the upper portion of the chamber K, for the purpose named.

A draft-damper, L', is provided in the lower portion of the door L, and immediately above the same is an opening, *l'*, that is inclosed by

a self-closing door, *l''*, through which may be inserted a poker for the purpose of removing clinker from the horizontal portion of the grate.

Secured to the lower portion, near each end of the door L, is a bracket, L'', which extends forward, and at its lower side and outer end bears upon the base-plate A, while within said end, at its upper side, is secured a fender, L''', as shown. When the door is opened the fender moves with the same, and thus offers no obstacle to free access to the interior of the stove. When said door is closed the brackets rest upon the base-plate, and furnish a firm support for said fender, and enable the latter to fulfill the purpose for which it was intended.

The space K operates as a hot-air chamber, and causes air admitted for the purposes of combustion to become highly heated before entering the fuel-chamber, thus affording the stove all of the conceded advantages of the hot-blast. Said space also increases the capacity of the ash-chamber, and enables the stove to be used for a longer period without becoming choked up with ashes than would otherwise be practicable.

In order that the heat given off from the lower and rear sides of the fuel-chamber, and such as is contained within the ashes and cinders of the ash-chamber, may be utilized for the purpose of heating air for combustion, a damper, N, is provided in and through the rear wall of said ash-chamber, and is intended for use when the front damper L' is closed. Said damper N is inclined downward and outward, so as to prevent ashes from lodging thereon and being shaken out when said damper is moved.

For the purpose of building a fire, or of increasing the combustion of the fuel, the open front of the combustion-chamber H is inclosed, when desired, by means of a blower, O, of usual form. When not in use, said blower is suspended from a hook or stud, *c*, that projects rearward from the rear plate C, such arrangement placing said blower in a convenient and accessible position, while it is out of sight, and the space occupied is not available for other purposes.

The exit-flue P is at the rear side, near the upper end of the stove, and from a point just below the same a flue-strip, Q, extends forward, upward, forward, and downward in a curve, and terminates at a short distance in rear of the front plate B, and at about the same distance above the opening in the front of the combustion-chamber H. Said flue-strip Q extends between the end plates D and D, so that the heated gases of combustion are compelled to pass between its front edge and the front plate B, by which means their heat is brought to the front and utilized, instead of being permitted to pass directly to and through said exit-flue.

The stove is covered exteriorly with slabs or plates of stone or vitreous material, preferably tiles, R, which are held in place by means of angle-bars of metal, one of which is placed at each corner of the stove, and extends laterally over the edges of the contiguous tiles.

The upper edges of the tiles R are contained within recesses formed in the top plate *e*, while the bars S are secured in place by means of a screw, *s*, that passes inward through the upper end of each into the interior shell of the stove, and a tenon at its lower end, which fits into a corresponding recess provided in the base-plate A.

The tiles R, above the open front of the combustion-chamber, are contained within a recess in the front plate B, and are secured in place by the corner-bars S and S, and by a flat bar, S', that is fastened upon said plate below said tiles, and extends upward over their lower edges.

The panel within the top plate E has its tiles R inserted from below, and then secured in place by means of a backing-plate, E', which fits beneath and closes the opening.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In combination with the door of an ash-pit, a fender which is supported by and moves with said door, substantially as and for the purpose set forth.

2. A heating-stove provided with a hot-air chamber in front of the grated front of and extending below its fuel-chamber, such hot-air chamber being formed by the forward extension of the walls of said stove, and forming a continuation of the ash-chamber, substantially as and for the purpose shown and described.

3. In combination with the hot-air chamber K, the glazed light-openings *k*, formed within its ends, substantially as and for the purpose specified.

4. In combination with the open upper end of the hot-air chamber K, and with the grate F, the movable hearth *m'*, inclosing said space, except at the front of said grate, at which point is left a vertical opening, substantially as and for the purpose shown.

5. In a heating-stove provided with an open grate, a supplemental draft-damper located in rear of the ash-pit, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of August, 1876.

NATHANIEL A. BOYNTON.

Witnesses:
HENRY T. RICHARDSON,
JAMES B. TAYLOR.