

Grate.

Patented May 5, 1857.



UNITED STATES PATENT OFFICE.

HENRY SEITZ, OF ST. MARYS, VIRGINIA.

CLOSE OR OPEN STOVE.

Specification of Letters Patent No. 17,235, dated May 5, 1857.

To all whom it may concern:

Be it known that I, HENRY SEITZ, of St. Marys, in the county of Pleasants and State of Virginia, have invented certain new and useful Improvements in Open Stoves; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which,

Figure 1, is a transverse vertical section of my improvement; (x) (x), Fig. 2 showing the plane of section. Fig. 2 is a front view of the same. Fig. 3 is a horizontal section of the same; (y) (y), Fig. 2, showing the plane of section.

Similar letters of reference indicate corresponding parts in the several figures.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A, represents a rectangular cast iron box or chamber which forms the body of the stove; said box or chamber having a grate B, fitted into its lower part. The grate is formed of horizontal bars (a) which project a short distance in front of the box or chamber. The sides of the box or chamber, at its front end, are provided with flanches or plates (b); and the top part is provided with a shelf (c); the plates (b) and shelf (c) forming a mantel. The box and plates and shelf may all be cast in one piece. The front of the box A, just below the shelf (c) is perforated as shown at (d), and the lower parts of the plates (b) are also perforated as shown at (e); see more particularly Fig. 2.

C, represents the ash-box, which is at the lower part of the box A, and underneath the grate B. This ash-box projects outward a certain distance in front of the grate, and a cast or sheet iron box D is fitted within the box C; and within said box C and over the box D, a box E, having a perforated or grate bottom, is fitted. The upper part of the ash-box that extends beyond the front of the grate is covered by a register F, which may be formed of a series of stationary bars (f) and a series of movable bars (g) placed over them. The box E is somewhat shorter than the box D, so that a certain degree of play is allowed it within the box C; and a rod or bar (h) is attached

to the front end of the box E; said rod or bar (h) passing through the front of the box C, and serving as a handle.

At each side of the grate B, a bar F¹, is placed. These bars are allowed to slide up and down in recesses in the plates (b). To the bars F¹, grate-bars (i) are attached. The said bars (i) are parallel with the bars (a) of the grate, but extend farther outward so that they may work up and down over the bars (a). To the inner sides of the bars F¹, horizontal projecting bars (j) are attached, one to each, and these bars are pivoted to counterpoises G, which rest or work on fulcrum pins or bearings (k).

The bottom of the grate B is formed of stationary bars (l), having movable or sliding bars (m) placed underneath them, and connected by a bar (n) to an arm (o), on a shaft or rod H, by turning which the bottom of the grate may be closed perfectly tight, or left open as usual.

Within the box or chamber A, a vertical chamber I is placed. The width of this chamber is not equal to that of the box A, as a space or passage J, J, is allowed at each side of the chamber I; see Fig. 3. The lower ends of the passages J, J, communicate with the external air openings (p), made through the sides of the box or chamber A, at the lower ends of the passages J, J.

By referring to Fig. 1, it will be seen that the front part of the chamber I forms the back of the grate B. Just above the grate B, and in the front plate of the chamber A, a register or damper K is placed. This damper or register may be formed in any proper way; a sliding damper or register would probably be preferable. This damper or register is operated by attaching an arm (o¹) to a bar (n¹) connected with the register; the lower end of the arm (o¹) being secured to a shaft or rod L, which passes through one of the plates (b) as seen in Fig. 3, and dotted lines in Fig. 2. The back of the chamber I, is placed some distance from the back of the box or chamber A, so as to allow a passage (s) which forms a communication between the ash-box C and the flue or chimney M.

Within the chamber or box A, and above the grate B, a plate N is placed. The lower end of this plate has a pivot or journal (t)

at each side, and these pivots or journals are fitted in the sides of the box or chamber A, as shown, the pivots or journals being allowed to turn freely in the sides of the box or chamber A. The upper end of the plate N has a similar plate O attached to it by hinges or joints (*v*) and the upper end of the plate N extends upward as far as the throat (*w*) of the flue, or the space between the upper end of the chamber I and a projecting ledge P at the inner side of the box A; see Fig. 1. The plate O is provided with a tenon or guide pin (*u*) at each end, which tenons fit in oblong slots (*u*¹) in the sides of the box A. To the lower end of the plate N, a plate Q is attached by hinges or joints (*a*^x); and a sliding plate R is attached to the under side of the plate Q; the plate R having cleats (*b*^x) upon it, which cleats fit or work in grooves (*c*^x) in the under side of the plate R, as seen in Fig. 1. The plates N, O, Q, R, extend the whole width of the box A.

By moving the upper end of the plate O backward, and likewise moving backward the lower plate Q, as shown in Fig. 1, in black, the draft will pass up from the grate B, in the direction indicated by arrows 1; but if the plates O and Q be moved outward, and the sliding plate R be shoved downward, as shown in red, the draft will pass up inside the plates as indicated by the arrows 2, and by moving the bars (*i*) so that the spaces between the bars (*a*) of the grate are covered by them, a perfectly tight or close grate is obtained; and when the plates O, N, Q, R, are adjusted as shown in red, a perfectly tight stove is obtained.

The cold air from the room or apartment passes through the apertures or openings (*e*) in the lower parts of the plates (*b*), and thence through the openings (*p*) into the lower ends of the passages J, J; and in passing up said passages the air becomes heated and escapes through the openings *d*, underneath the shelf, into the apartment or room; see arrows 4. By opening the damper or register K, warm air will be admitted on the upper surface of the fire and

all smoke and inflammable gases will be consumed.

The bars (*i*) being balanced or counterpoised may be readily adjusted by the use of an ordinary poker; and the plates O, N, Q may also be adjusted by the same implement. When the fire is completely inclosed by the bar (*i*) and plates, and the register F is also closed, the ashes in the box E may be sifted by moving the box E back and forth; and all dust will pass up the passage (*s*) into the flue or chimney M, as shown by arrows 3; the dust being effectually prevented from entering the apartment.

The box or chamber A, is inserted in the wall or chimney directly underneath the flue M; the front of the mantel being flush with the face or outer surface of the chimney or wall, and a space X is allowed between the sides of the box A and the masonry, as shown in Fig. 3.

By the above improvement, the advantages of both the open grate and the close stove are obtained, and the objections to both are avoided. No dust can escape into the room—one of the objections to open grates; and the greater portion of the heat is not allowed to escape as it usually does in common grates. At the same time my improvement does not occupy any space in a room; it being fitted in the chimney. A strong draft may be obtained at any time by merely inclosing the grate by adjusting the bars (*i*) and plates O, N, Q, R, as described.

Having thus described my invention, what I claim as new, and desire to secure by Letters-Patent, is:

I claim the arrangement, in a grate, of the plates O, N, Q, R, supplementary grate-bars (*i*) dust flue (*s*), air-heating chambers X, X, I, and passages J, J, when the whole are disposed as shown for the purpose set forth.

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Witnesses:

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