

W. P. ABENDROTH.
Fireplace.

No. 161,191.

Patented March 23, 1875.

FIG. 2.

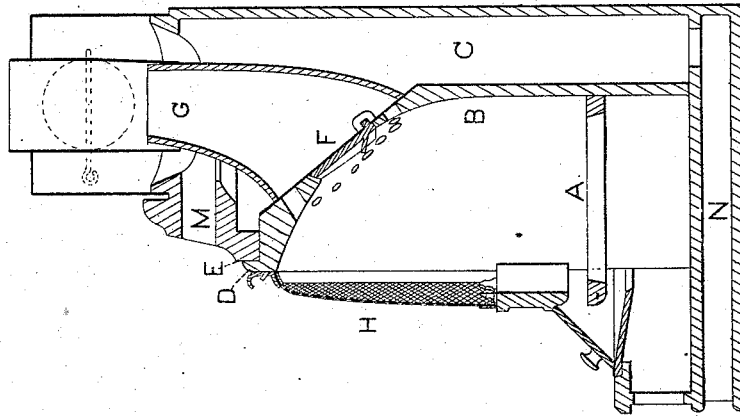
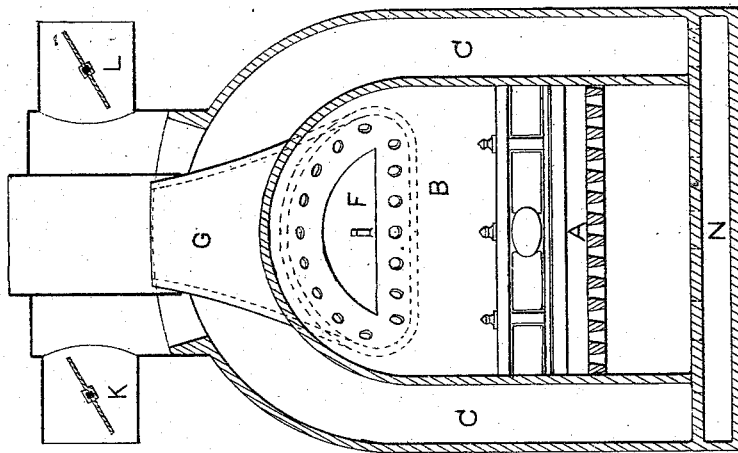


FIG. 1.



WITNESSES.

Lloyd Eliot
Chas Leonard

William P Abendroth

INVENTOR.

UNITED STATES PATENT OFFICE

WILLIAM P. ABENDROTH, OF PORT CHESTER, NEW YORK.

IMPROVEMENT IN FIRE-PLACES.

Specification forming part of Letters Patent No. **161,191**, dated March 23, 1875; application filed October 26, 1874.

To all whom it may concern:

Be it known that I, WILLIAM P. ABENDROTH, of the town of Port Chester, in the county of Westchester and State of New York, have invented certain Improvements in Fire-Place Stoves, of which the following is a specification:

This invention pertains to the class of heating apparatus known as fire-place stoves, but it also possesses certain qualities that make it peculiarly adapted to a grate and stove combined; and the invention consists in combining with a hooded grate and valve a perforated reflector, as will hereafter appear; and the invention also consists in making the front edge of the hood over the grate with a flange to project wholly in front of the face-plate or jamb, so that the seam or joint will open into the fresh air, instead of from the fire pot or chamber, as is now commonly the case.

Figure 1 represents a front elevation of the invention with the front plate removed: Fig. 2 is a vertical section of the heater at a right angle to Fig. 1, and having the view taken from the right-hand side.

The hooded grate is shown at A, and is placed in a horizontal position, and its plan is that of a semicircle, the diameter being to the front and the curve portion to the rear, which fits into the semicircular portion of a cast cylinder, which rises up in a vertical position for about one-half its height, and then inclines forward, and also curves over to the center from each side, forming a dome-shaped arch for about one-half its diameter, as represented at B in the drawings. Surrounding this hooded grate is an exterior wall or jacket of castings, a little larger on the sides and rear, and which forms an air-space between the two, as at C in the drawings. This exterior wall fits up closely to the front plate or jamb, but the interior shell or hood over the grate projects forward in front of the face or jamb plate, and through the archway of the same, and is provided with a rib or flange, as at D, which extends around in front of the face-plate, as at E, so that the joint between it and the face-plate E is exterior to the fire-chamber, and cannot, therefore, admit the leakage of gases to the hot-air chamber or space be-

tween the two walls, and thence to the chamber above. In the rear of the dome, over the grate, is placed a valve or damper, as at F, which closes the central entrance to the smoke-stack above it, and said stack, as at G, is conical in form, and spreads out over the outer surface of the dome, and within the space between the dome and the exterior wall, which rises vertically in the rear, and thereby forms a large heating-chamber around the base of the smoke-stack. Around said central valve or damper, and just within the inner surface of the smoke stack or flue, is a series of holes through the dome over the grate, so that when the valve or damper is closed a partial opening is left for the smoke and heat rising from the grate below, and which would rush up through the center of the stack if no valve or damper were there to prevent their central course, and consequently the heat is caused to impinge upon the inclined wall of the stack or flue, and thereby impart a greater degree of radiation than if allowed to escape through the open center, and thence into the open air. This spreading of the rising heat from the grate against the convergent wall of the smoke-stack is also facilitated very greatly by the use of a perforated reflector, as at H, which, when the heat from the grate is not wanted in the room, but in an upper chamber, is placed over the open space in front of the grate, and serves as a reflector or a reverberator of the heat, and at the same time permits a sufficient current of air over the grate to assist in supplying combustion and circulation, and also causes a partial draft through the grate, similar to the ordinary blower. The combination of these elements is of very great importance in utilizing the heat from the grate for the upper chambers, and it may be controlled by the dampers in the side flues, as at K and L, one or both of which may be used, as desired. If, however, the heat is not wanted in the upper chambers, the dampers may be closed, and the heat will be thrown out through the opening, at M, in the front plate over the arch.

A cold-air space is left below the ash-pan, as shown at N; but this may be closed in front, and the air allowed to enter from the side or rear through suitable openings for that pur-

pose. This, however, forms no part of the invention, as such a construction is well known; but

I do claim—

1. In combination with a hooded grate, supplemental heater, and valve, a perforated reflector, substantially as described, and for the purposes set forth.

2. The combination, with a fire-place, of the dome-shaped hood, provided with the rib or flange D, substantially as and for the purpose described.

WILLIAM P. ABENDROTH.

Witnesses:

BOYD ELIOT,
CHAS. H. LEONARD.