

J. McHENRY.
Fire-Place.

No. 165,604.

Patented July 13, 1875.

FIG. 1.

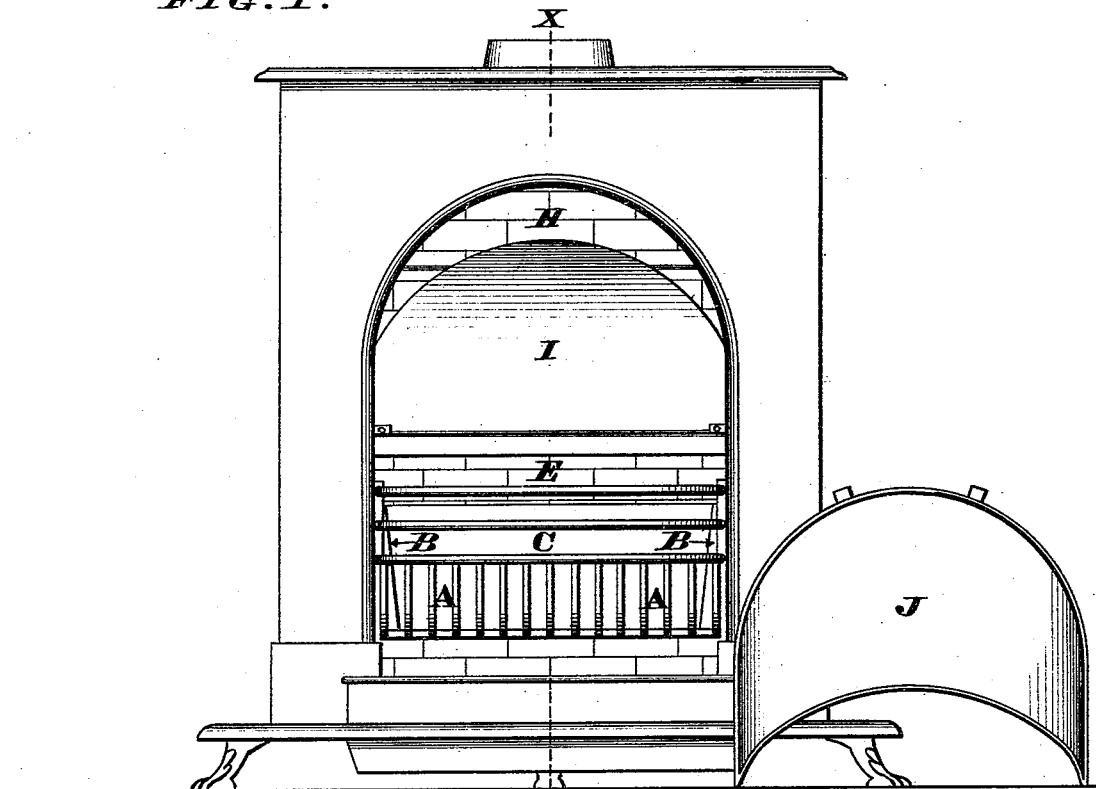


FIG. 3.

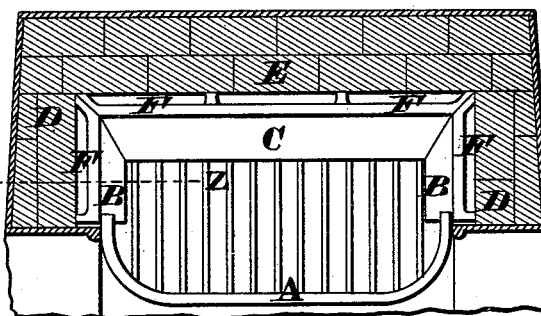


FIG. 2.

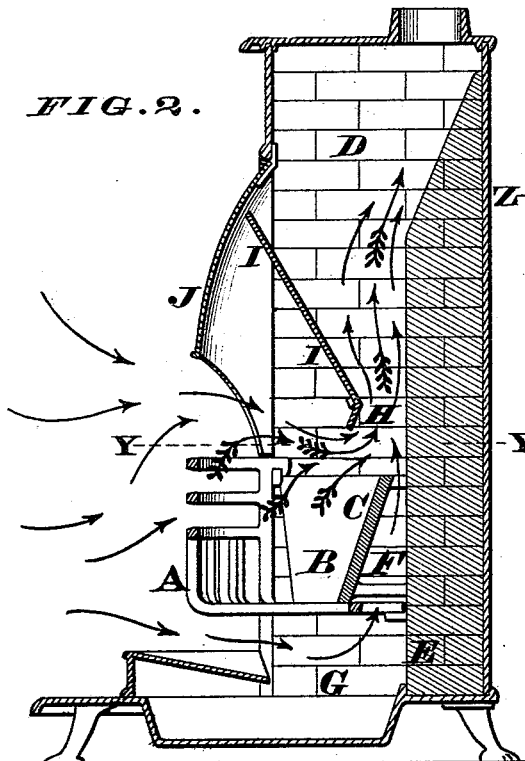
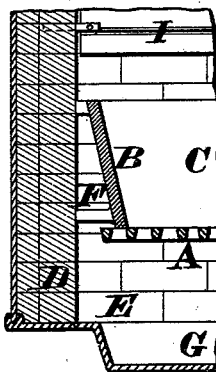


FIG. 4.



*John McHenry,
By Knight & Atty.*

*Attest,
Pat. H. Layman
Walter Knight*

UNITED STATES PATENT OFFICE.

JOHN MCHENRY, OF CINCINNATI, OHIO.

IMPROVEMENT IN FIRE-PLACES.

Specification forming part of Letters Patent No. **165,601**, dated July 13, 1875; application filed April 23, 1875.

To all whom it may concern :

Be it known that I, JOHN MCHENRY, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Fire-Places, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing making a part of this specification :

My improvement is more particularly designed for open grates and fire-places, and, in its complete form, comprises an arrangement of deflecting-plate above and air-passages behind, and at the ends of the fire-basket, and a hood or bonnet, the effect of the arrangement being to bring the products of combustion into intimate contact with the entering air, so as to almost completely consume said products, and thereby produce the greatest possible heating effects with a given consumption of fuel. The arrangements are, moreover, such as to project the heat mainly downward upon the floor of the room.

In the accompanying drawing, Figure 1 is a front elevation of an open-front stove, embodying my invention, the hood being removed. Figs. 2, 3, and 4 are sections on the lines X X, Y Y, and Z Z, respectively.

The grate proper or fire-basket A is provided with cheeks or end plates B and back plate C, which are preferably made easily removable, and which are so formed and set as to leave between the grate and the inclosing walls D E of the fire-place, air inlet or inlets F, which communicate below with the ash-pit G, and above with the chimney H in the manner represented. Fixed athwart the fire-place, at a suitable distance above the grate, is my deflecting-plate I. This plate is so placed as to incline upward and forward, except a narrow strip or flange at its lower edge, which inclines downward and forward, as shown. It is supported in notched side racks or any suitable supports in such a way as to be removable when desired. A removable projecting hood or bonnet, J, closing the upper portion of the fire-opening, serves the double purpose of concentrating the draft on the fire and of preventing the escape of smoke and dust into the apartment. This hood also

serves, in conjunction with the deflector I, to direct the heat of the fire down upon the floor of the apartment. The passage F may be closed at top and communicate with the fire by openings in the back and end plates of the grate. The parts B C and I may be of iron, or of fire-tile, or other suitable material.

The operation is as follows : The air that is drawn to the fire is divided at the grate, a portion passing under it up to the rear portion of the fire through the narrow converging and heated passage-way F at the sides and rear of the grate. The upper current of air, passing under the front hood or draft-plate J, sweeps across the flame, strikes the deflector I, and is turned by it downward into the flame. The air and flame are forced by the draft created by the deflector under its lower edge into intimate contact, the flame being spread out and swept, both on the rear and front sides, by the two opposing air-currents, so as to insure an almost complete combustion of the otherwise unconsumed carbon. The deflector I, in addition to increasing the draft and forcing the flame to pass between the two currents of air, also intercepts and reflects the heat downward into the room. Experience has demonstrated that a fire-place constructed in this improved manner will also prevent ashes from rising, and smoke and soot from escaping into the room.

I claim herein as new, and of my invention—

As an improvement in fire-places, the combination of external hood J, forming a blower, smoke preventer, and reflector, the deflector I, placed athwart the chimney and inclining upward and forward, leaving a narrow passage between the rear wall and the top of the grate, the grate A, separated from the back and side walls so as to form the space F, the whole arranged to cause the commingling of the front and rear drafts in close-down contact with the incandescent mass of fuel, as set forth.

In testimony of which invention I hereunto set my hand.

JOHN MCHENRY.

Attest :

GEO. H. KNIGHT,
JOHN C. HEALY.