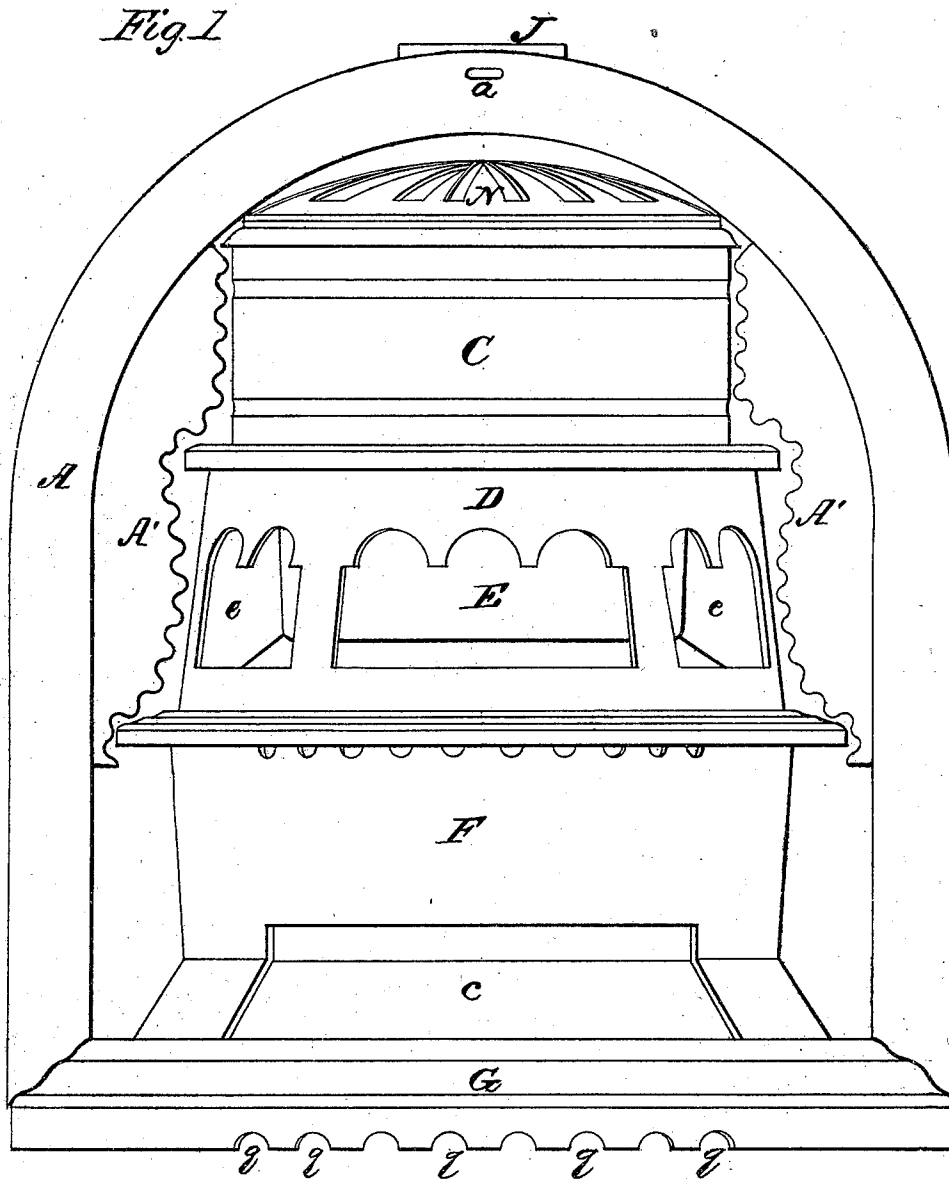


J. S. PERRY.

Base-Burning Fire-Place Heaters.

No. 134,767.

Patented Jan. 14, 1873.



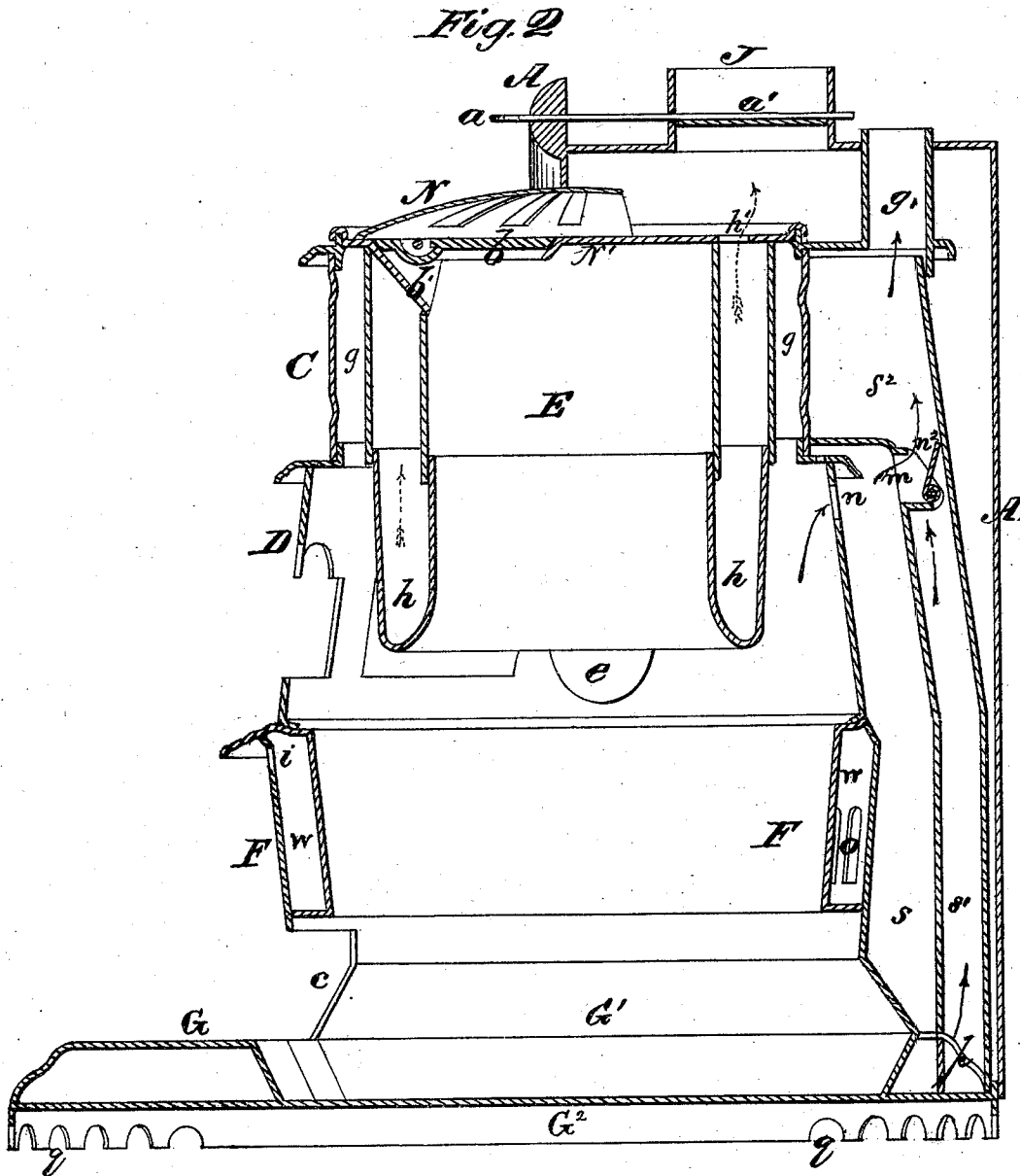
Witnesses.
R. T. Campbell
James Martin Jr.
Inventor
John S. Perry
By Atty. Mason Leewick Lawrence

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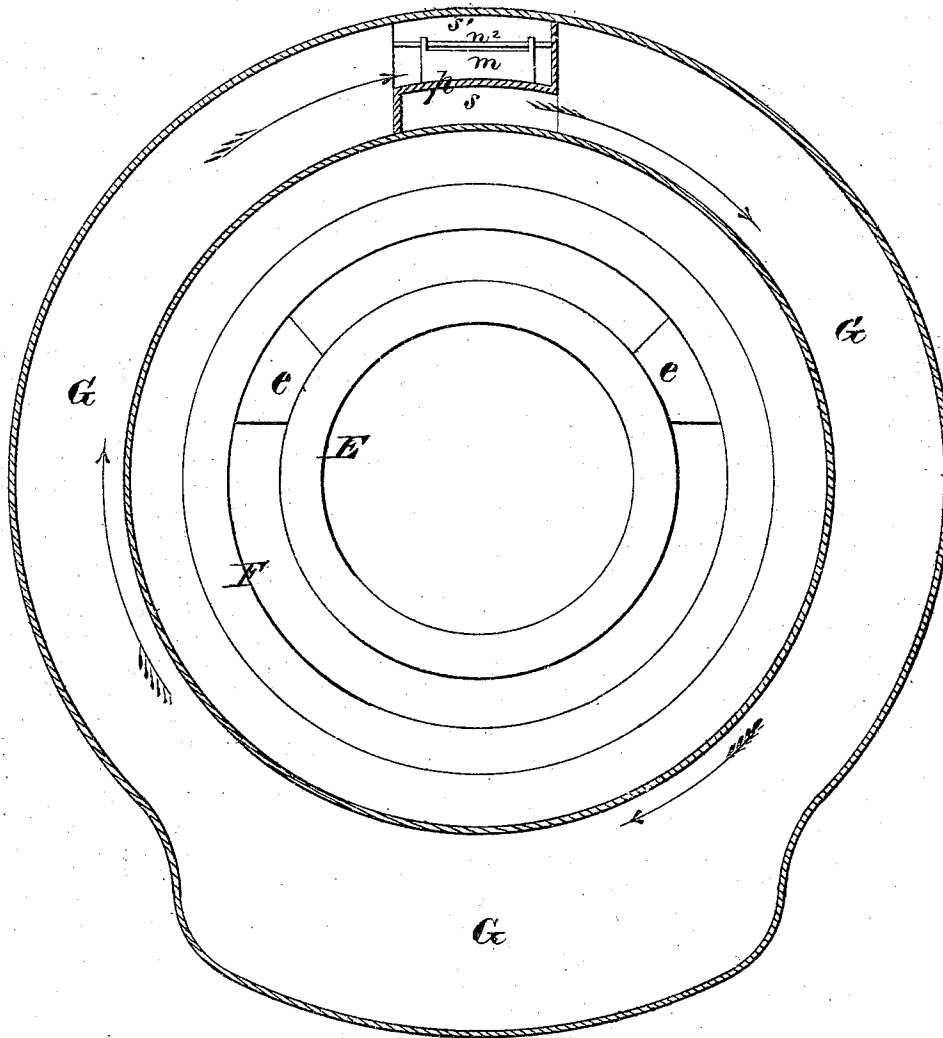
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Fig. 3



Witnesses:
R. T. Campbell
J. H. Campbell

Inventor
John S. Perry
by
Miner. Heiwick & Hammer

UNITED STATES PATENT OFFICE.

JOHN S. PERRY, OF ALBANY, NEW YORK.

IMPROVEMENT IN BASE-BURNING FIRE-PLACE HEATERS.

Specification forming part of Letters Patent No. 134,767, dated January 14, 1873.

To all whom it may concern:

Be it known that I, JOHN S. PERRY, of Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Fire-Place Heaters; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1, Plate 1, is a front elevation of the stove and its jacket; Fig. 2, Plate 2, is a section taken vertically through the stove and its jacket from front to rear; and Fig. 3, Plate 3, is a bottom view of the stove with the bottom plate removed.

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

The object of this invention is to increase the capacity of fire-place heaters for warming the rooms in which they are placed as well as other rooms in the building—such, for instance, as the parlor and second and third stories. A deficiency in this particular has been the chief cause of complaint against all fire-place heaters that have heretofore been made, and it is upon this special point that I have sought to base the improvements hereinafter explained.

The following description will enable others skilled in the art to understand my invention.

In the accompanying drawing, G represents the base section or hearth of the heater, which is an annular chamber entirely surrounding the floor of the ash-pit G¹, and communicating behind with flues s s', for the escape of the products of combustion, as will be hereinafter explained. F represents a fire-pot section; D, an illuminating or window section; C, a heat-radiating section; and N, an open ornamental cover for the flat top plate N'. E represents the fuel-magazine, which is fed through a hole, b', which hole is closed by a plate, b, over which is the removable ornamental cover N, as shown in Fig. 2. The magazine is constructed with double walls throughout its length, which have between them an annular chamber, h, into which air is admitted through passages e e. The air thus admitted into the annular chamber h is subjected to the heating action of the two walls of the magazine, and is allowed to escape through an open-

ing, h', which is made through the top plate N', as indicated in Fig. 2 by the dotted arrow. After passing through the opening h', the heated air will all escape into the room in which the heater is arranged, if a damper, a', in a pipe, J, is shut; but if this damper is open a large amount of the heated air will ascend through pipe J into rooms above. The pipe or hot-air conduit J rises from the arched crown of a jacket, A, which incloses the sides, back, and top of the heater, and the damper a' in said pipe is provided with a rod, a, which extends horizontally through the front of the jacket A, as shown in Figs. 1 and 2. Between the outer wall of the magazine E and the wall of section C, is an annular space, g, which is closed at its upper end by the top plate N', and which opens below into the combustion-space surrounded by the illuminating-wall D. The highly-heated products of combustion will thus rise into the space g, and heat the outer wall of the magazine as well as the wall of section C. Below the window-section D is the fire-pot F, which is composed of double walls with an air-heating chamber, w, between them. The air enters this chamber w through openings i in front, and escapes, when heated, through openings o at the sides, into the chamber formed by the jacket of the heater. The entire front part of the outer wall of the fire-pot may be made of ornamental lattice-work, if desired, which will allow a free ingress of air, and at the same time present a beautiful appearance. Below the fire-pot F is the ash-pit G¹, with a front-door opening, c, leading into it, and surrounding the bottom of this ash-pit is the hollow section G, before described; and beneath this hollow base and the floor of the ash-pit is a space, G², into and out of which air is allowed to circulate through opening g, shown in Figs. 1 and 2.

Here, again, it will be seen that I take advantage of heat-radiating surfaces for warming air within the jacket A.

At the back of the stove are the two flues s s', for conducting the products of combustion away from the combustion-chamber. At the upper end of the window-section D is an outlet, n, through which the products of combustion escape from the combustion-chamber

into the upper end of the descending flue s , and directly opposite this outlet n is an opening, m , which is provided with a damper, n^2 , and which forms a communication between the upper end of flue s and the flue s^1 when said damper is open, as indicated in Fig. 2. I call the damper n^2 the direct-draft damper, for the reason that when it is open the products of combustion pass directly off into a flue, s^2 , and thence escape into the chimney through a pipe, g' .

When said damper n^2 is shut the products of combustion all descend through the flue s and enter the hollow heat-radiating base G on one side of a Γ -shaped partition, p . They thence pass around this base, and, escaping therefrom, enter the lower end of the ascending flue s^1 on the opposite side of said partition p , as indicated by the arrows in full lines, Figs. 2 and 3. The products thence ascend through the flue s^1 into the flue s^2 , from which they escape into the smoke-pipe g' .

It will be seen from the above description, first, that highly-heated air is obtained from the chamber h , which is formed by the magazine-walls; second, highly-heated air is obtained from the chamber w , formed by the fire-pot walls; third, heated air is obtained from the space G^2 beneath the floor of the ash-pit and hollow base G .

Heat is radiated from the wall of section C , from the illuminating-wall D , from the outer wall of the fire-pot F , from the top, sides, and bottom of the hollow base G , and, in fact, from every externally-exposed surface of the stove.

Large volumes of air pass into the chamber h , which, though primarily intended for warming upper rooms, can be thrown into the rooms below by closing the damper a^1 .

The flues s s^1 I denominate, when combined, a siphon-flue, and from this flue, thus considered, I obtain a very powerful radiation of heat through all the rear plates.

The two wings A^1 , shown in Fig. 1, may be hinged to the sides of the jacket A , so that they can be opened when access is desired to the rear of the heater.

The success of my improvements depends on the employment, in combination with the heat-radiating base and the other heat-radiating surfaces above the base, of the jacket A . This jacket will throw from the fire-place of the room in which the stove is arranged a large amount of heat when the damper a^1 is open; at the same time a large amount of heat will pass up through the flue J into the apartments above.

I am aware that outstanding stoves have been constructed with hollow heat-radiating bases; but such stoves are not adapted for use in fire-places; nor have they ever been combined with a radiating-jacket which communicated with upper apartments for warming two or more apartments at one time.

As most of the chimney-flues and fire-places in buildings of the present improved construction are very small, it is necessary, in order to properly carry out the objects above set forth, to make every exposed part of the stove a heat-radiating surface, and to employ a jacket which will reflect heat from a hollow radiating-base into the room in which the stove is arranged. Without such a base, when the damper a^1 is opened nearly all the heat will rise through the pipe J into an upper apartment and leave the lower apartment imperfectly heated.

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

1. The annular chamber G and jacket A , in combination with the partition p , the flues s s^1 , the openings n m , and the damper n^2 , all being applied in a fire-place stove substantially as described.

2. The hollow heat-radiating base chamber G and the jacket A combined in a fire place stove, substantially as described.

JOHN S. PERRY.

Witnesses:

CHAS. W. SIMON,
JOHN E. GALLUP.