

D. WELLS.
Heating Stove.

No. 90,141.

Patented May 18, 1869.

Fig. 1.

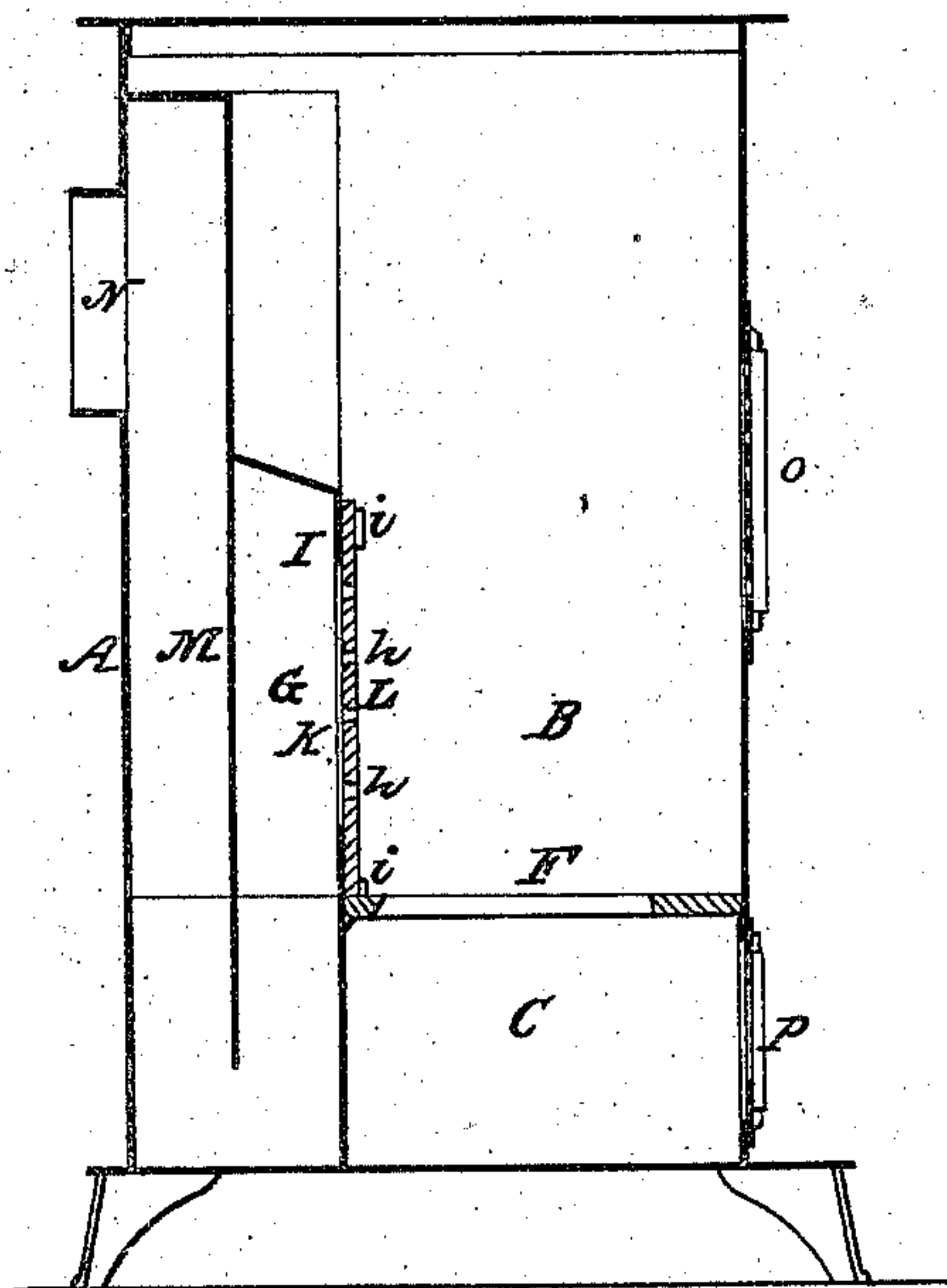
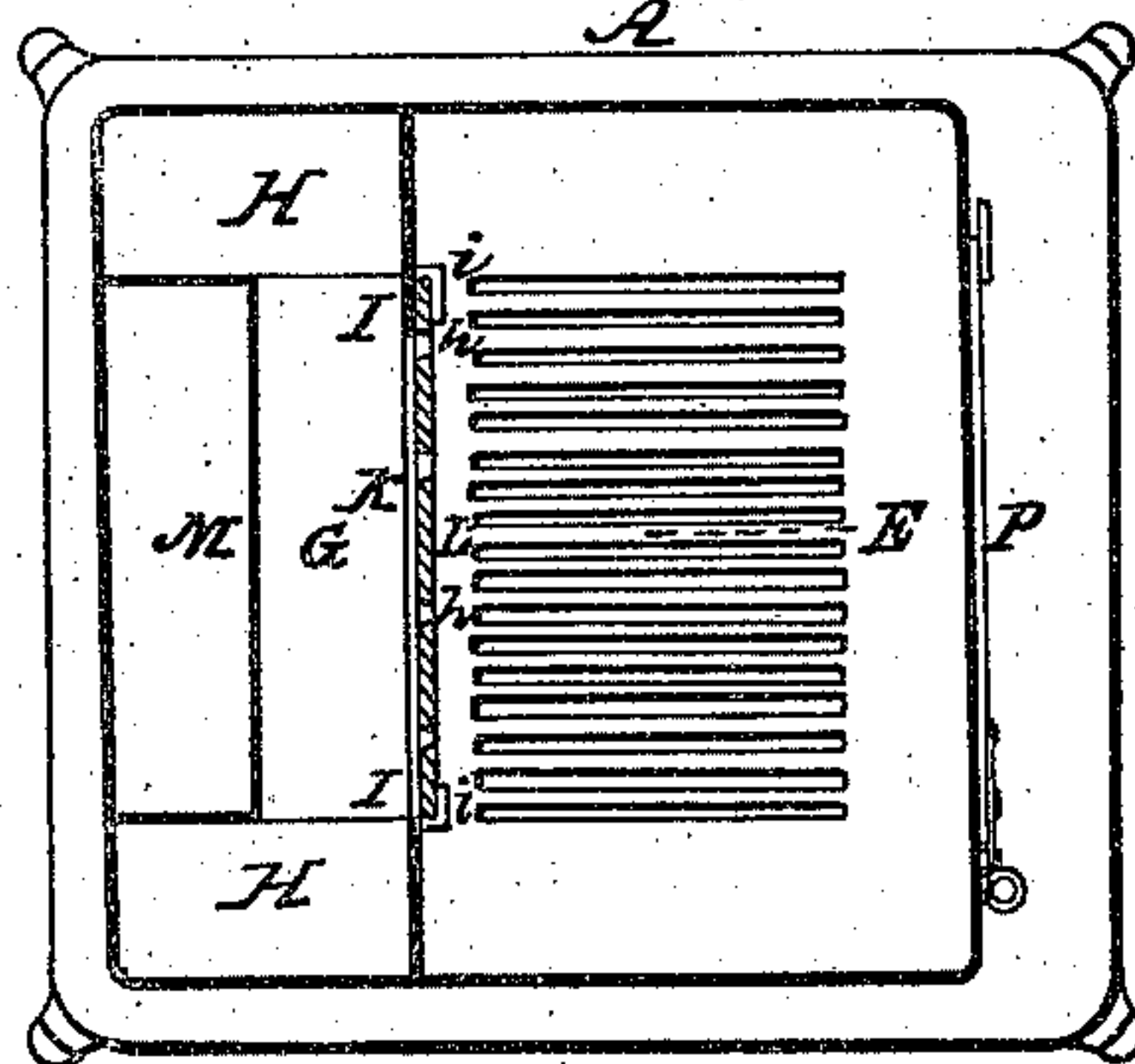


Fig. 2.



Witnesses:

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DAVID WELLS, OF LOWELL, MASSACHUSETTS.

Letters Patent No. 90,141, dated May 18, 1869.

COAL-STOVE.

The Schedule referred to in these Letters Patent and making part of the same.

To all persons to whom these presents may come :

Be it known that I, DAVID WELLS, of Lowell, in the county of Middlesex, and State of Massachusetts, have invented a new and useful Improvement in Stoves; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a vertical section, and

Figure 2, a horizontal section of a stove provided with my invention.

On the 24th day of December, A. D. 1858, Letters Patent, No. 22,392, were granted to me for an invention having reference to stoves or furnaces.

In the stove embodying that invention or improvement, the discharge-opening leading into the exit-flue was arranged at the lower part of the back, and it opened directly out of the chamber for firing or burning the waste gases and carbonaceous products of the smoke.

While in my present stove I retain the said chamber, with its openings or flame-inducts, and the lateral and vertical flues which are on its flanks, and dispense with the chamber for supplying air to the gas and smoke-burning chamber, I (for the purpose of carrying out my present invention) combine, with the said smoke-consuming chamber and its flues and flame-inducts, another chamber or radiator, to extend up against the back of the stove, and between it and the gas and smoke-consuming chamber; and I provide such auxiliary chamber or radiator with an exit or discharge-opening, arranged at its upper part.

Furthermore, I form, in the partition which separates the fire-place from the smoke-consuming chamber, a rectangular or other proper-shaped opening, which I cover by a separate plate of metal, or other proper material, having a series of flame-inducts or holes made through it, each of which is in the form of a frustum of a cone, or is made tapering, with the larger base toward the smoke-consuming chamber. By so making the holes, they will not easily become clogged by ashes or cinders, as they are liable to when constructed without any taper. Furthermore, with the opening through the partition, and the separate perforated flame-duct plate to extend across and be fixed thereto, in manner as hereinafter described, it becomes an easy matter, at any time, to substitute a new plate for one which may have become cracked or otherwise damaged by the heat of the fuel of the fire-place.

In the drawings—

A represents the external case or body of the stove;

B is the fire-place; and

C, the ash-chamber, there being a grate, F, between the two.

In rear of the fire-place is the smoke-consuming chamber G, which communicates with the fire-place by means of two vertical flues, H H, arranged on the flanks of such chamber G, and opening both into it and the fire-place.

The partition between the chamber G and the fire-place is shown at I, it being provided, just above the grate, with an opening, K, which is covered by a plate, L.

The flame-ducts or holes of the plate are shown at h h, each of them being tapered or flaring from its front to its rear end.

The said plate is held in place by lugs i i, which extend from the partition, and lap on the plate.

In rear of the smoke-consuming chamber G is the heat-radiating chamber M, which, at or near its bottom, opens into the lower part of the chamber G.

The opening for the discharge of smoke from the chamber M is shown at N, the fire-place and ash-chamber doors being represented at O P.

The smoke and waste gases burned in the chamber G will heat the back of such chamber, the heat absorbed by such back being transmitted through it, and radiated into the auxiliary chamber M, where it will be taken up by the spent gases and smoke which may be therein, (or may have escaped from the chamber G,) and by such will be transmitted to the back of the chamber M, from whence such heat will be radiated into the apartment in which the stove may be.

In the operation of the above-described stove, the waste gases and smoke in the smoke-consuming chamber G will be set on fire by the flame which will escape from the fire-place in jets through the holes at its back.

My present stove will heat a room to much better advantage than the stove above mentioned as heretofore patented by me, for, in my present stove, instead of the waste smoke and heated gases of the smoke-consuming chamber G being led directly into a discharge-flue, as they are in the patented stove, they are led into and made to flow through the auxiliary chamber M before they escape from the stove. Thus their heat will be imparted to such chamber or its back, and they will also serve as a means of absorbing heat from the back of the smoke-consuming chamber, and transmitting such heat to the backs of the radiating-chamber.

In the stove as heretofore patented by me, I employed, at the back of the smoke-consuming chamber, an air-receiving and heating chamber, having holes for discharging air into the smoke-consuming chamber. I found that this air-chamber so cooled down the volatile products in the smoke-consuming chamber as to prevent or greatly impede their combustion. Therefore, in carrying out my present invention, I have dispensed with such air-chamber, and employed the auxiliary smoke-passage or chamber M, arranged in rear of the chamber G, such chamber M serving to maintain the spent gases and smoke of the chamber G at the proper temperature for being consumed or burned. The chamber M is also productive of other useful effects, as hereinbefore mentioned.

Therefore, I herein make no claim to the combination of the smoke and gas-consuming chamber, its lateral or flanking flues, and its front or flame-holes with

the fire-place; nor with the same and an air-supplying chamber, as represented in the said patent, No. 22,392; but

What I claim as my present invention is as follows; that is to say—

I claim the combination of the auxiliary chamber M, having the discharge-opening N arranged in the upper part of it, with the fire-place B, the smoke-consuming chamber G, its vertical flues H, and front flame-holes *h*, the whole being substantially as described.

I also claim a stove as made not only with the smoke-consuming chamber G, the vertical flues H, and fire-

place B, combined and arranged as set forth, but as having a hole or opening, K, through the back of the fire-place and front of the smoke-consuming chamber G, and a separate perforated plate, L, arranged to extend across such opening, as specified.

I also claim a stove provided with a smoke-consuming chamber, G, arranged and combined with its fire-place by flues, and also communicating with the fire-chamber by flame-passages or holes *h*, tapered in manner as set forth.

Witnesses:

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