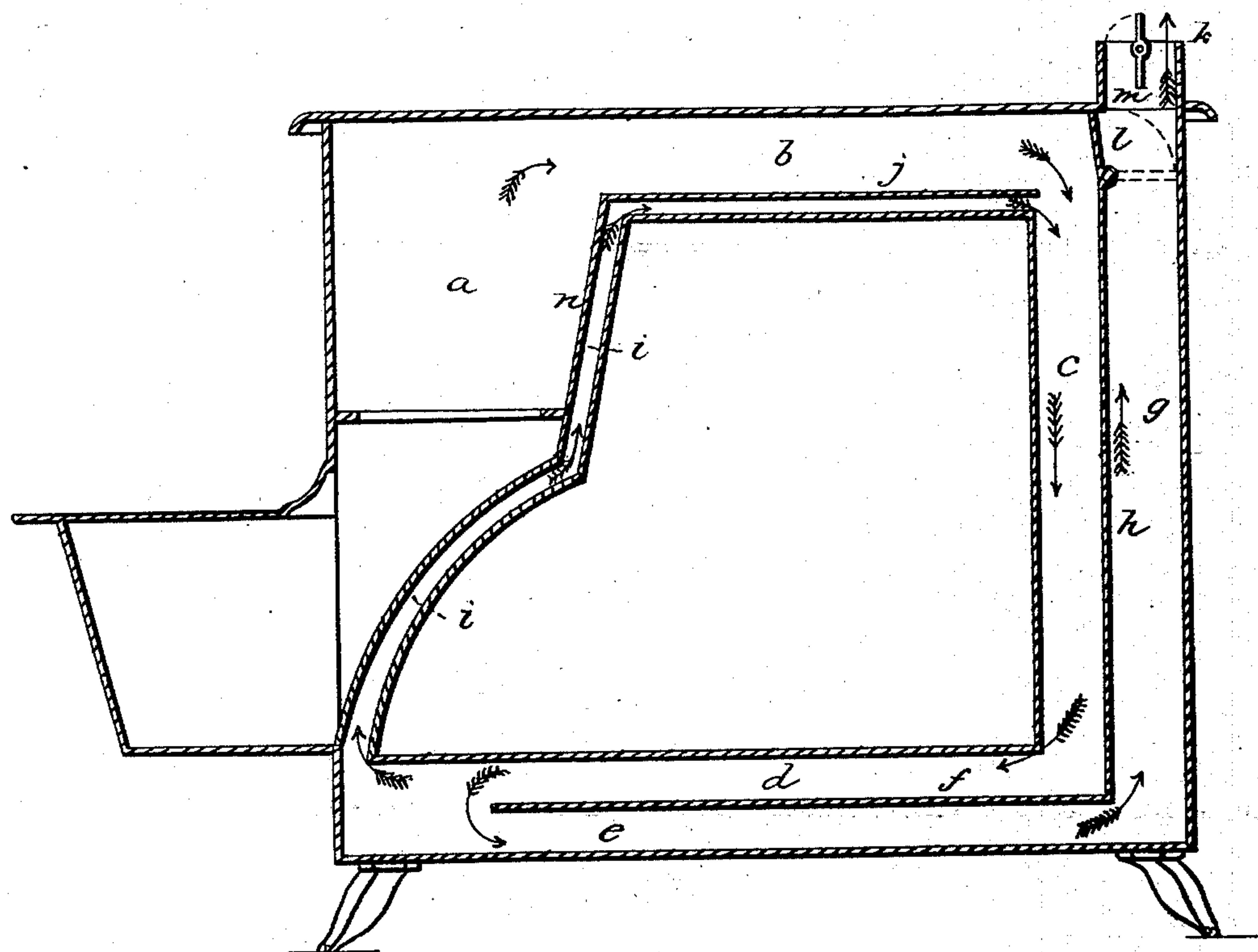


G. W. WALKER.

Cooking Stove.

No. 62,100.

Patented Feb. 12, 1867.



Witnesses:

J. T. Kidder
M. W. Frothingham.

Inventor:

George W Walker
By his Atty.
Crosby & Gould

United States Patent Office.

GEORGE W. WALKER, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 62,100, dated February 12, 1867.

IMPROVEMENT IN COOKING STOVES.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, GEORGE W. WALKER, of Boston, in the county of Suffolk, and State of Massachusetts, have invented an Improvement in Cooking Stoves; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practise it.

The object of my invention is the more perfect utilization of the heat contained in the escaping gaseous products of combustion, and the more uniform heating of the oven than heretofore obtained.

My invention relates to the means by which I effect the said object, and it consists in so arranging and combining a flue at the front of the oven with the main flue of the stove, that said flue at the front of the oven opens at both ends into the main flue, receiving therefrom and discharging into it gaseous products of combustion, this arrangement surrounding the oven with a moving current of heated volatile products of combustion.

The drawing shows, in vertical longitudinal central section, a cooking stove embodying my invention, in which *a* is the fuel-chamber; *b*, the first part of the main flue leading therefrom to *c*, which is in direct contact with the back of the oven, and is the down-draught part of the main flue, which connects with a horizontal part, *d*, of the main flue, which is in contact with the bottom part of the oven, said part *d* connecting with the part *e* of the main flue which is located directly beneath the part *d*, and is separated therefrom by the plate *f*, the part *e* connecting with the vertical part *g* of the main flue, which is separated from the part *c* by the plate *h*. At the front of the oven a flue, *i*, is formed between it and the fuel-chamber, and the ash-pit or space beneath the fuel-chamber, and this flue may be continued, as shown in the drawing, over the top of the oven by the introduction of the plate *j*, so that the exit of flue *i* into the main flue is near the down-draught part *c*, instead of near the fuel space *a*. The inlet of the flue *i* is at its lower end where the parts *d* and *e* of the main flue connect.

The operation of a stove constructed as described, is as follows: The damper *k* being open as shown, and the shifting-valve *l* being in the position seen in dotted lines, the fire is kindled in the fire space *a*, and when combustion is well established, the shifting-valve is set in the position shown in full lines, and the currents of the volatile products of combustion proceed from the fuel-chamber *a* to the smoke pipe *m*, in the direction shown by the black arrows through those parts of the main flue marked *b*, *c*, *d*, *e*, and *g*, in the order named. As the wall *n* of the combustion-chamber *a* becomes heated, the air in the flue *i* rises, and its place is supplied from the main flue at the junction of its parts *d* and *e*, with the products of combustion, which are diverted from the main flue and rise into flue *i*, to take the place of the air which is rarefied and caused to rise therein by the heat of the fire, thus establishing a current in the direction of the red arrows, which is supplied from and empties into the main flue, so that the oven is well and equally heated in all its parts. I am aware that the oven of a cooking stove has been set in the centre of an enclosed space, so that all around it there was a passage into which the products of combustion did not enter, and in which the contained air obtained a regular circulation around the oven, consequent upon its rising from the most heated part of the stove. This I do not claim, and my invention differs therefrom in the opening at both ends of the flue *i* into the main flue, so that I circulate hot gaseous products of combustion around the oven instead of heated air, merely, by which I utilize a large portion of the caloric contained in the escaping currents.

I claim the arrangement of the flue *i*, with respect to the oven, and the main flue, substantially as described.

GEO. W. WALKER.

Witnesses:

J. B. CROSBY,
F. GOULD.