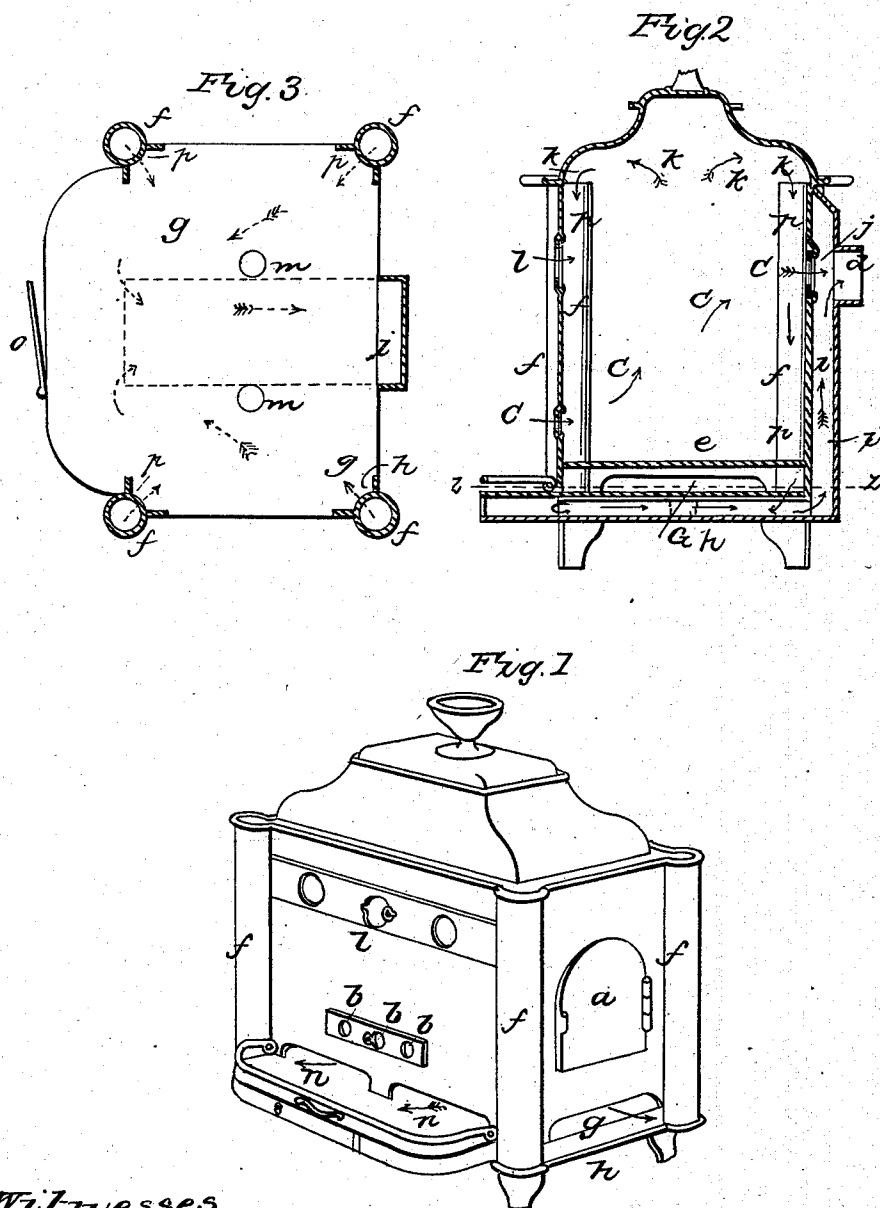


G. W. WALKER.

Stove.

No. 47,474.

Patented April 25, 1865.



Witnesses
W B Crosby
T J Doolan

Inventor
Geo. W. Walker

UNITED STATES PATENT OFFICE.

GEORGE W. WALKER, OF BOSTON, MASSACHUSETTS.

STOVE.

Specification forming part of Letters Patent No. 47,474, dated April 25, 1865.

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 Improved Stove; 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 practice it.

In stoves which are designed for warming apartments much heat is lost by reason of too direct a passage of the products of combustion to the outlet from the stove, and also by reason of the bottom of the stove being so covered with ashes as to be practically a non-radiating surface.

To increase the radiating-surface of stoves, to retain the products of combustion long enough to cause them to part with a large portion of their heat, to make the stove send forth heated currents of air near the floor and where the feet can be conveniently warmed, and to make use of the corners of the stove for flues, which serve to strengthen the structure as well as to convey the gaseous products of combustion, are the objects of my invention.

Figure 1 is a perspective view of a stove embodying my invention. Fig. 2 is a vertical section taken through the center of the stove from front to rear; and Fig. 3 is a horizontal section taken in the plane of the line *z z*, seen in Fig. 2, and showing the radiating-base in plan below.

In these figures, which represents a stove adapted for burning wood, *a* shows the door through which fuel is supplied, *b* the passage through which the air to support combustion passes, and *c* the arrows showing the direction of the current when passing most directly into and out of the stove at the outlet *d*.

The bottom of the stove upon which the ashes are deposited, and which supports the fuel, is represented by *e*, while beneath this bottom, with a space intervening, is a hollow sub-base with which communication can be had through flues formed at *f f f f* in the corners of the stove, these flues opening out of the interior of the main part of the stove and discharging into the sub-base, the upper plate or surface of which is marked *g*, and the lower plate or surface *h*. The flues before mentioned are formed to a great extent of the material

making the main part or body of the stove, requiring the addition only of inner tie-sheet, *p p p p*, (see Figs. 2 and 3,) these making part of the flues at *f f f f*, which flues are thus formed with but very little addition to the cost to the stove and to the amount of its material, while at the same time the strength of the body of the stove is greatly increased.

I do not wish to be understood as claiming herein cylindrical flues made separate from and located outside of the body of the stove when used in combination with a hot-air chamber extending in front of the stove, such a construction being old and being expensive as compared with mine, and not operating to strengthen and tie together the main body at its corners. The space between these plates is divided by an arched sheet, shown in dotted lines in Fig. 3, which is open at the front toward the hearth of the stove, and makes a passage which communicates with the vertical flue *i*, seen at the rear of the stove, which connects with the outlet *d*.

In the passage by which the currents designated by the arrows marked *c* escape, a damper or valve of any suitable kind is arranged, as at *j*. When this is closed, it will be evident that the gaseous products of combustion must take the direction of the arrows marked *k*, passing from the interior of the body of the stove to its corners, down the flues at *f f f f* into the sub-base at each of its four corners, and thence toward the front into the space under the hearth, and thence through the center or arched-formed flue to flue *i* and to the outlet *d*.

At *l*, in the upper part of the front of the stove is placed a damper or valve, through which air can be admitted to regulate combustion. Two small pipes, *m m*, pass through the sub-base, and serve for passages by which air can pass into the space between the plates *e* and *g*, there to be heated and expelled in the direction indicated by the arrows *n n*.

In the sub base at the front of the stove is a door, *o*, through which the interior of the sub-base can be got at for removal of any deposit therein.

It will be obvious that by the construction herein specified two more radiating-surfaces are obtained than exist in former constructions, each of which surfaces is as large as the bottom *e*, or larger, as shown in the drawings, and it will also be seen that said surfaces will

not be apt to lose their value as radiating-surfaces by reason of accumulations or deposits thereupon.

The stove is, even when new and without introduction of ashes upon the bottom *e*, perfectly secure against communicating fire in a downward direction, which is an accident of common occurrence with stoves with only the single bottom *e*.

I claim—

1. A stove constructed with a sub-base separated from the main base by an air chamber or passage, and operating in the manner and for the purpose substantially as described.

2. Also, the construction of a stove with flues formed of the material of the outside of the stove-body and of tie-sheets within the body, when such flues are arranged to convey the products of combustion to heat a hollow extension of the base in front of the stove.

In testimony whereof I have hereunto set my hand this 21st day of February, A. D. 1865.

GEO. W. WALKER.

Witnesses:

FRANCIS GOULD,
J. B. CROSBY.