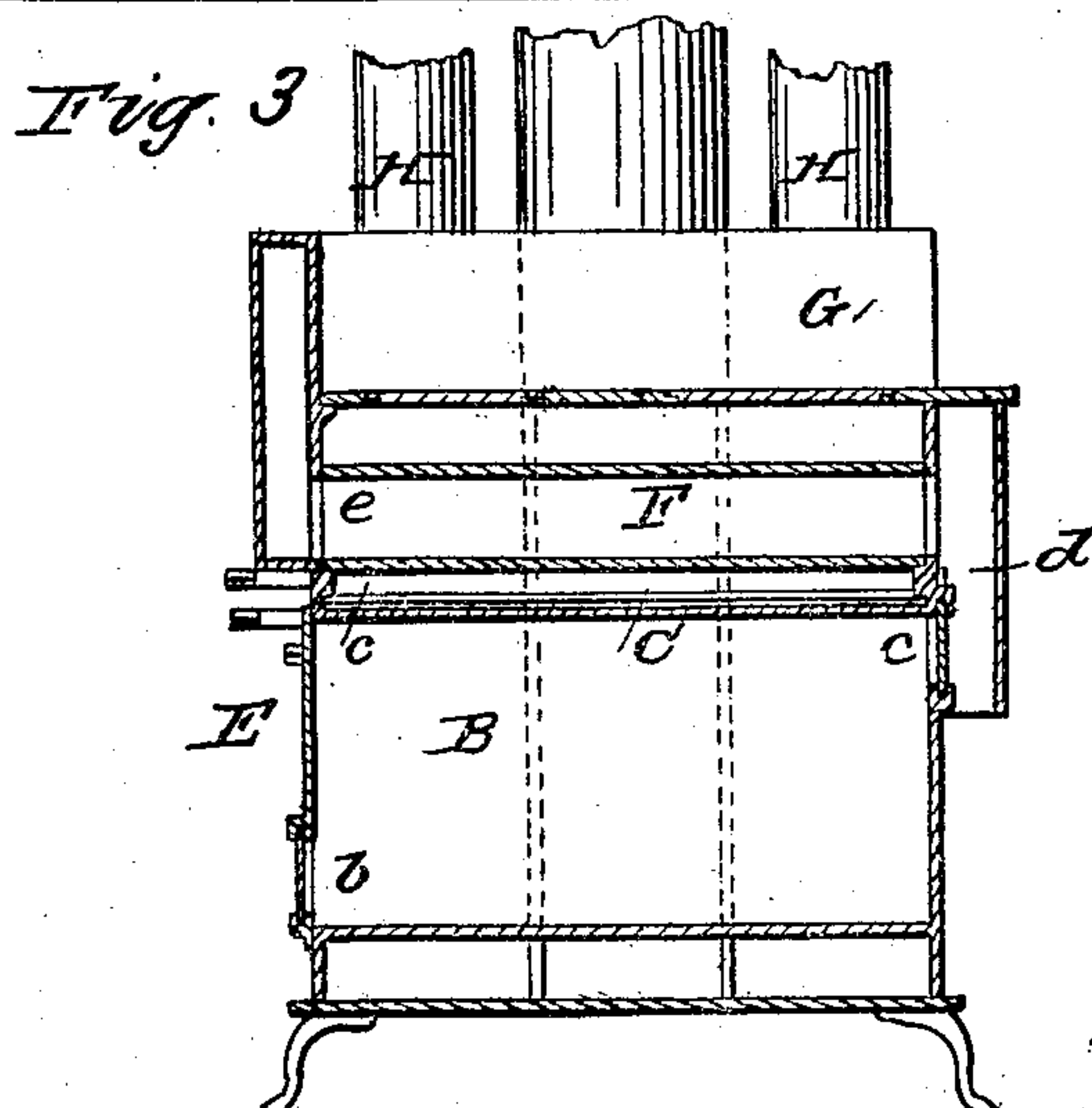
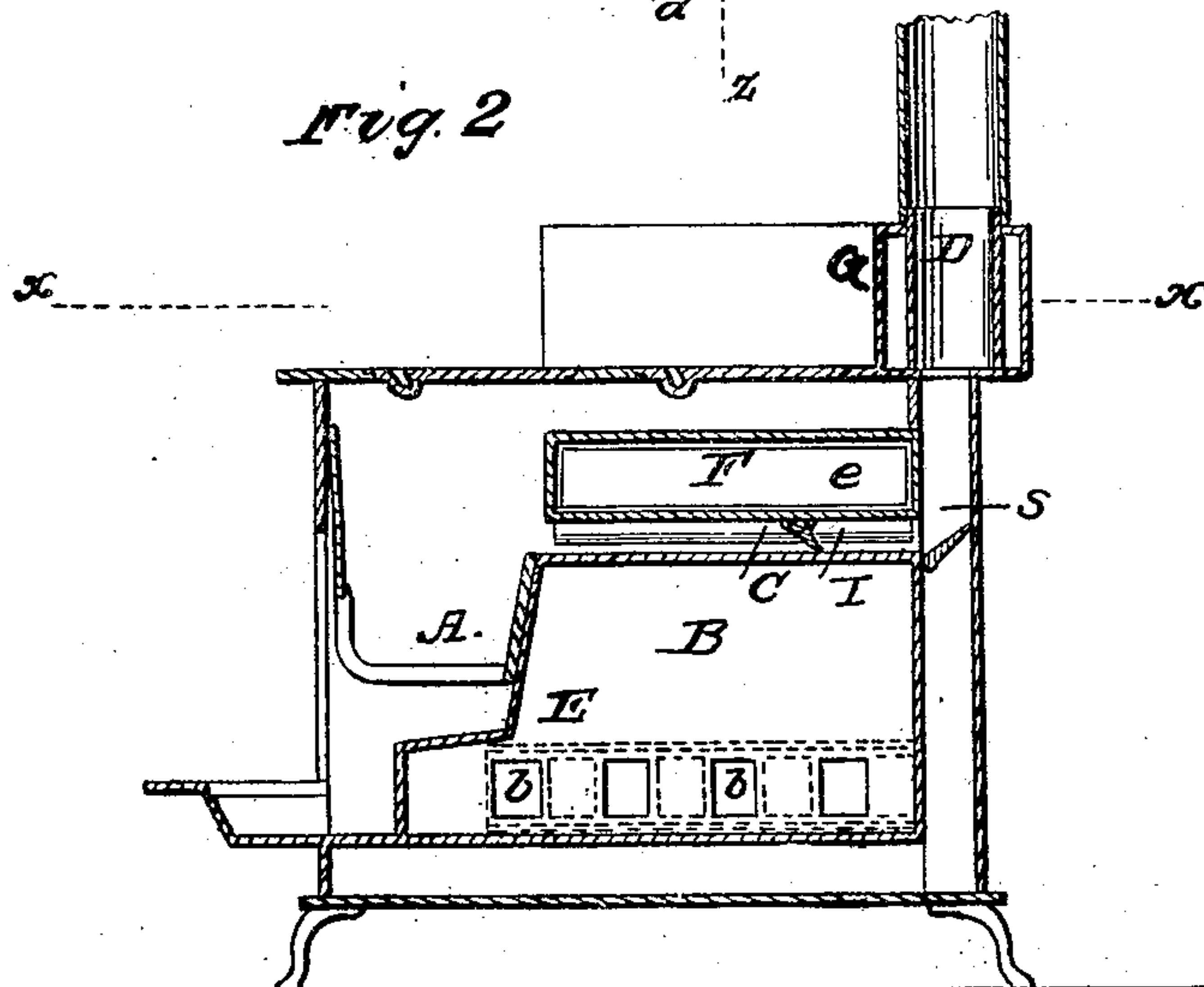
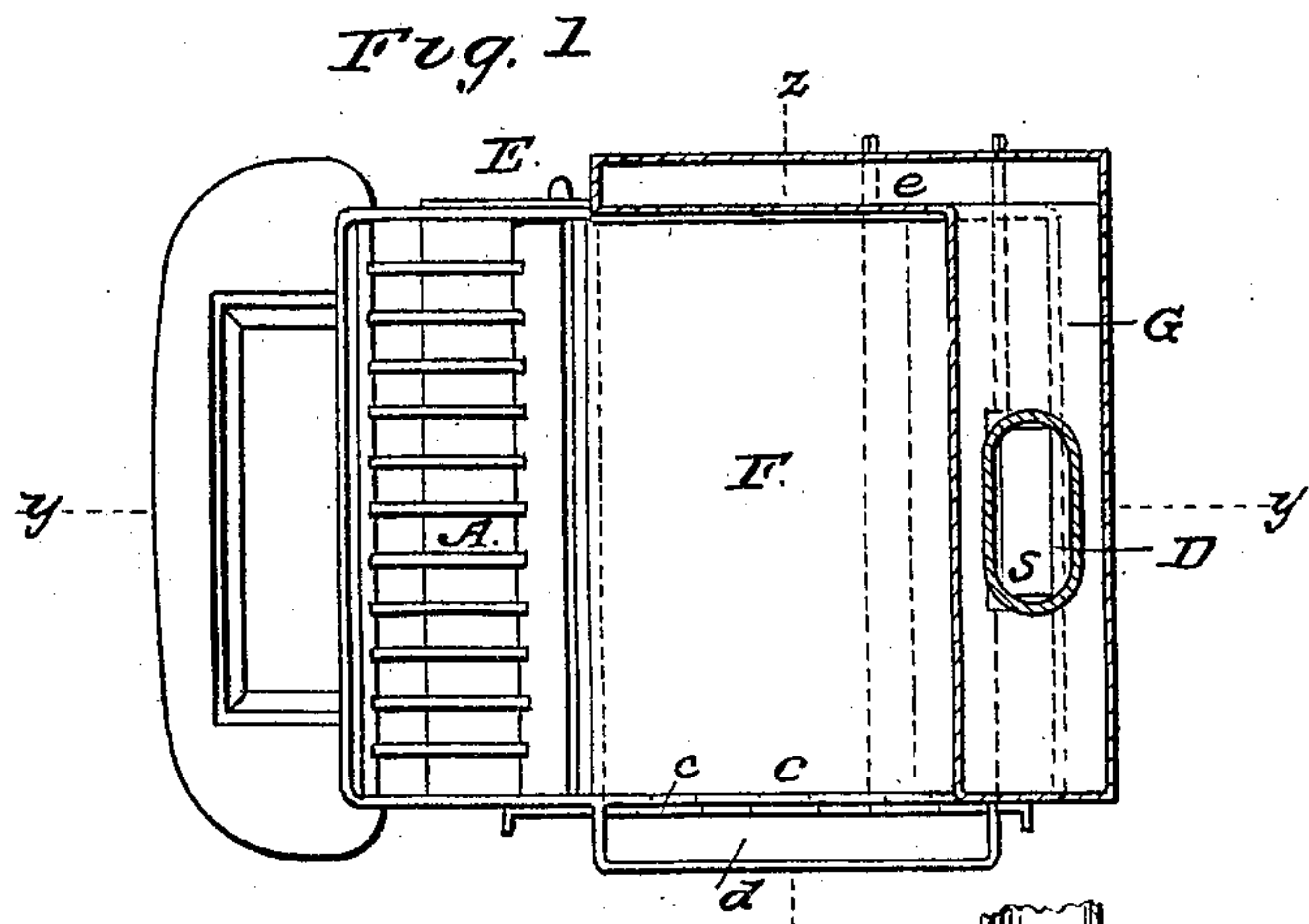


W. & G. GARDNER.

Cooking Stove.

No. 101,116.

Patented March 22, 1870.



Witnesses
Fred Haynes
Ferd Tusch

Inventor
Wm Gardner
Geo Gardner

United States Patent Office.

WILLIAM GARDNER AND GEORGE GARDNER, OF GLEN GARDNER STATION, NEW JERSEY, ASSIGNORS TO THEMSELVES, OLIVER L. GARDNER, AND R. WESTBROOK MYERS, OF SAME PLACE.

Letters Patent No. 101,116, dated March 22, 1870.

IMPROVEMENT IN COOKING-STOVES AND RANGES.

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

To all whom it may concern:

Be it known that we, WILLIAM GARDNER and GEORGE GARDNER, both of Glen Gardner Station, in the county of Hunterdon and State of New Jersey, have invented a new and useful Improvement in Stoves and Ranges, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 represents a sectional plan of a cooking-stove, taken as indicated by the line *x x* in fig. 2, with the top plate of the stove removed, and constructed to embrace our improvement;

Figure 2 is a vertical section, taken as denoted by the line *y y* in fig. 1; and

Figure 3, a vertical section at right angles to fig. 2, taken as indicated by the line *z z*.

Similar letters of reference indicate corresponding parts.

Our invention, which is either applicable to cooking-stoves or ranges, has for its object the heating of air designed to be conveyed to other apartments than the one in which the stove or range is placed; and

The improvement consists in a certain arrangement of a cross-passage in rear of the fire-place for the air which is required to be heated to pass through in its way to the pipe or pipes that convey it to the room or places to be warmed.

The invention also includes a combination of said air-passage with the oven, whereby the air to be heated is first passed through the oven and then through the cross-passage.

Likewise the invention embraces an arrangement of a damper between the oven and said cross-passage, to make the products of combustion either pass off directly over the oven or over the cross-passage arranged above the latter.

And furthermore, the invention includes a box arranged to incase the stove-pipe base, for communicating additional heat to the air as it passes from the cross-passage to the pipe or pipes which convey it to the place or places required.

Referring to the accompanying drawing, the cooking-stove there represented is, as regards many or most of its parts, including the arrangement of its fire-place, oven, and flues for passing off the products of combustion, similar to other stoves now in use; thus—

A is the fire-place;

B, the oven; and

C, a flue over the latter, made to connect with the stove-pipe base D, for the products of combustion to pass off.

E is the door of the oven arranged on one side of the stove, and which may be provided with a slide made to open and close air-inlets or openings *b*.

On the opposite side of the oven is also a slide made to control openings *c*, which connect with a passage, *d*, that is in free communication with the one end of a cross-passage, F, and which is in communication with the external air.

This cross-passage F is arranged in rear of the fire-place, and, as here shown, over the oven, so as to derive heat therefrom or from the products of combustion passing between it and the oven and around or over said cross-passage, which latter extends from side to side of the stove, and is in connection at its back end, as at *e*, with a box, G, arranged to incase the stove-pipe base D, for the purpose of imparting additional heat to the air as it passes to the pipe or pipes H, which serve to convey the heated air to upper apartments or elsewhere.

I is a damper arranged in the flue C, between the top of the oven B and bottom of the cross-passage F, to direct the draught as required, causing, according as said damper is shifted, the products of combustion to pass either directly over the oven, or, on opening a damper, *s*, over the cross-passage to the stove-pipe base.

Such regulation of the damper may be determined by the heat it is required to impart to the oven or to the cross-passage F.

A similar damper may be arranged in the flue-way between the top plate of the stove and top of the cross-passage F, to operate in connection with the damper I, so that when the one is opened, the other is closed, according to the direction it is required to give the draught.

The air is heated as it passes through the cross-passage F and out of the box G to the pipes H. This may simply be either by allowing the external air to be thus circulated, or by allowing air to pass through the oven to the cross-passage F, by opening the slides which control the openings *b* and *c*, and whereby the odors or fumes of the oven may also be dissipated.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The arrangement of the openings *b* and *c* in the sides of the oven, with relation to the air-flue *d*, its heater F, and chamber G, as shown and described, for the purpose specified.

2. The arrangement of the heater F over the oven B, and surrounded by a flue above and beneath it, as and for the purpose set forth.

3. The damper I, arranged between the upper plate of the oven B and bottom of the cross-passage F, substantially as described.

WM. GARDNER.
GEO. GARDNER.

Witnesses:

FRED. HAYNES,
HENRY PALMER.