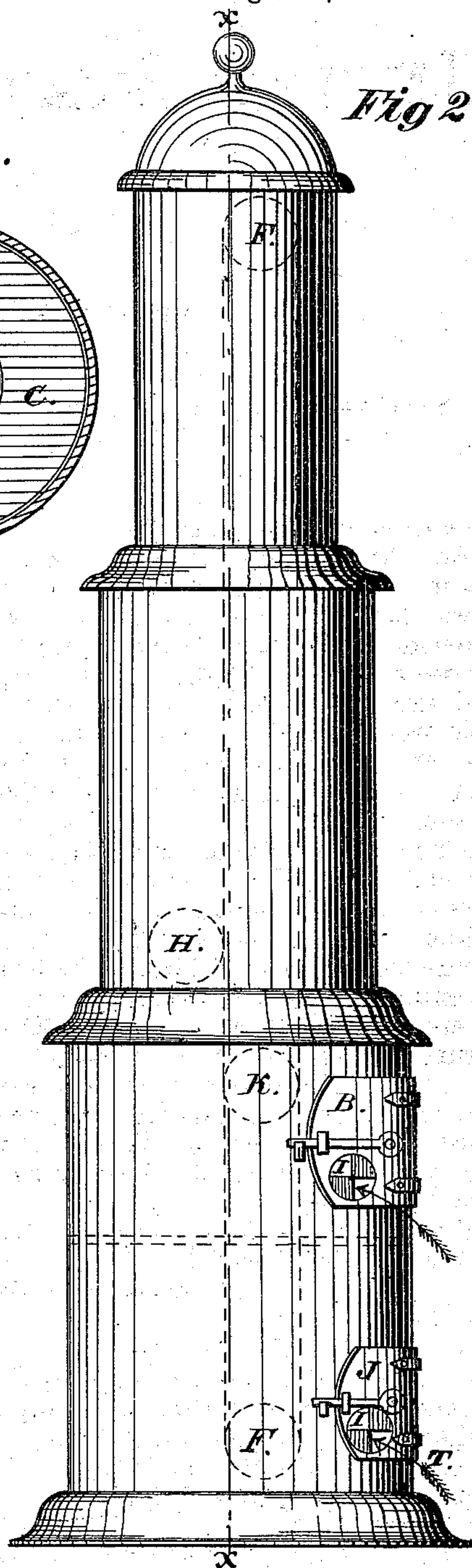
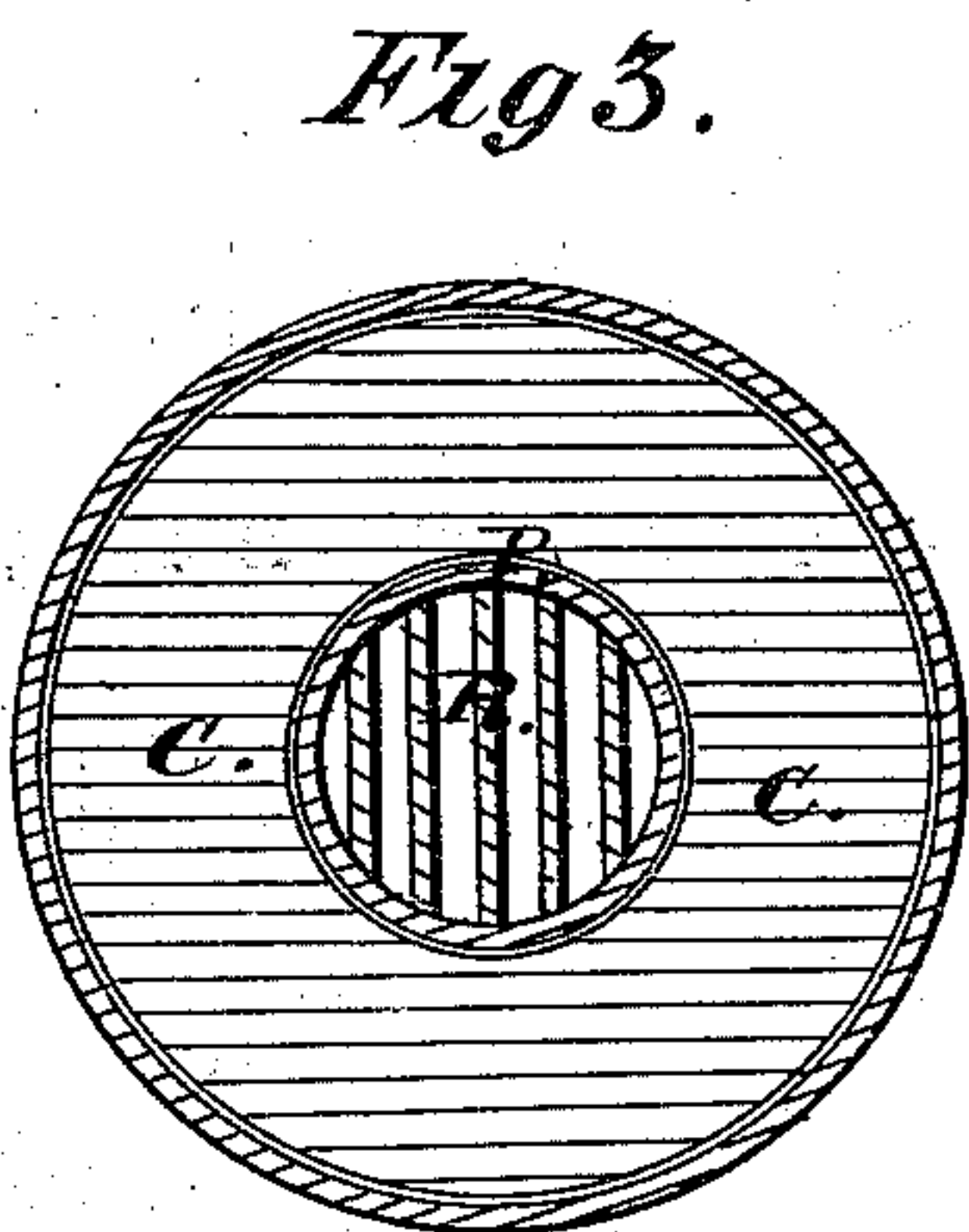
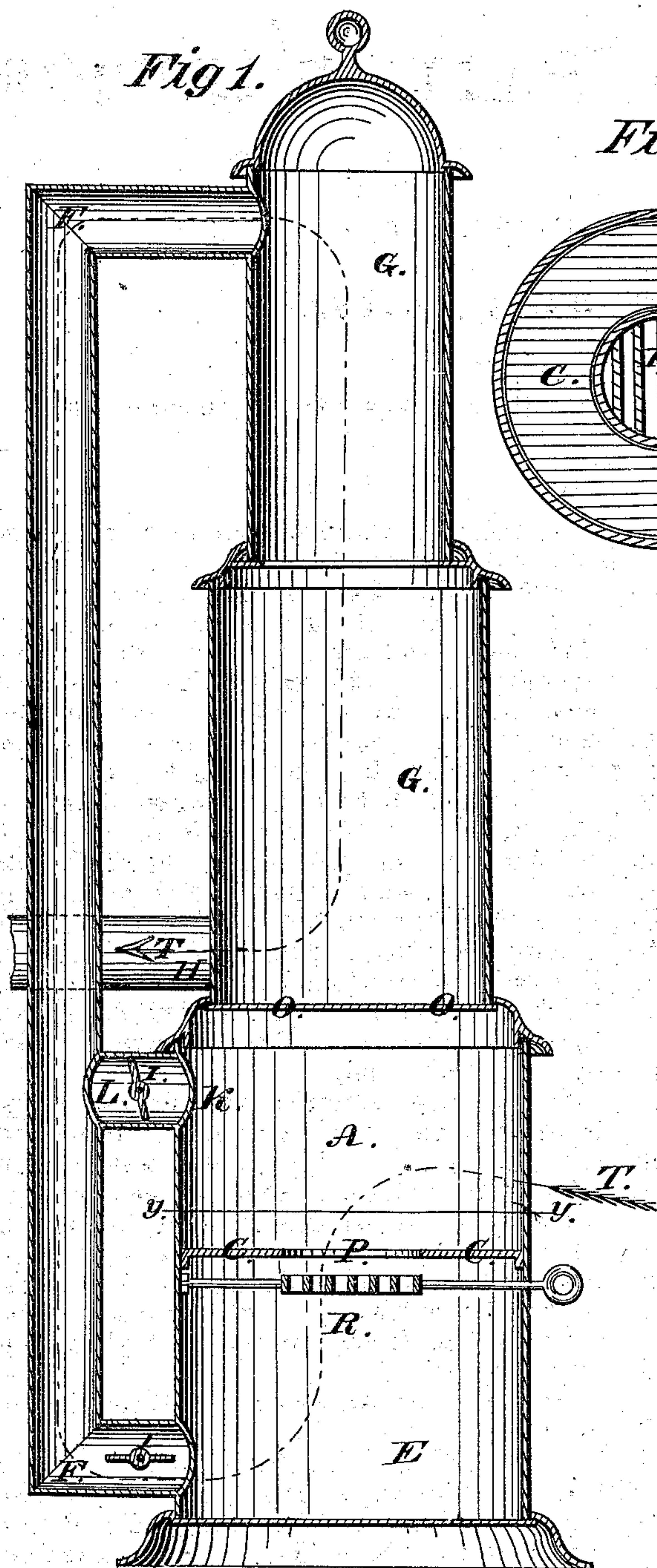


S. COOK.
Heating-Stoves.

No. 154,459.

Patented Aug. 25, 1874.



Witnesses.
Henry W. Ghason
John Dewell

Inventor.
S. Cook

UNITED STATES PATENT OFFICE.

SILAS COOK, OF MAGNOLIA, IOWA.

IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. **154,459**, dated August 25, 1874; application filed March 20, 1874.

To all whom it may concern:

Be it known that I, SILAS COOK, of Magnolia, in the county of Harrison and State of Iowa, have invented a new and useful Improvement in Heating-Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification.

This invention relates to an improvement in the class of heating-stoves in which the products of combustion are caused to take a circuitous route to the escape-flue, in order to secure more perfect utilization of heat. The invention relates to the combination of parts, whereby the products of combustion are returned through the stove to be reheated after passing through an exterior vertical flue, and their course at starting is directed upward from the grate or downward through the same, as required, in the manner hereinafter described.

Figure 1 is a sectional elevation of the stove on the line *x x* of Fig. 2. Fig. 2 is a side elevation. Fig. 3 is a cross-section on the line *y y* of Fig. 1.

A is the fire-box. B is the fire-door. C C is a partition between fire-box A and ash-box E, forming also the bottom of the fire-box. P is the opening through which heat and draft pass down and into ash-box E. R is the grate, to be rotated when it is necessary to free it from ashes.

I do not confine myself to the particular arrangement of grate here shown.

A solid plate may be used instead of the grate, by making said plate larger than the opening P, and placing it at a proper distance below to allow the draft to pass.

Experience has proved that with this ar-

rangement, with either grate or plate, perfect combustion is obtained.

F F is the pipe through which heat and draft pass from the ash-box E and up in the direction of the arrow. G G is the heating-chamber, that receives the heat and draft near the top, and discharges it near the bottom of said chamber. H is the opening through which the draft is discharged.

It is found that by the downward draft in chamber G G, as the air cools by coming in contact with the walls of the chamber, it descends more rapidly than is required to keep up a sufficient current in the stove; consequently there is an upward current formed in the center of the chamber, which carries back the hottest portion of the air and discharges that which has lost the heat through the walls of the chamber only.

O O is the partition between fire-box A and heating-chamber G G, in which partition there is no opening. I I I I are dampers to regulate the draft and to change the same between chamber A and ash-box E. J is the door at which to take out the ashes. K is the opening into the pipe L to change the draft when combustion is too rapid. T T (the line of the arrow) is the direction of the draft when properly in operation.

Having thus described my invention, I claim as new—

In a heating-stove, the fire-box A, having apertured bottom C and grate R, the short connecting-pipes having dampers I I, the exterior vertical pipe or flue F, and the chamber G, located directly over the fire-box, all combined as shown and described.

The above specification of my invention signed by me this 12th day of March, 1874.

Witnesses:

SILAS COOK.

HENRY W. GLEASON,
JOHN DEWELL.