

H. F. T. Hale,

Magazine Stove.

No. 44,183

Patented Sept. 13. 1864.

Fig. 1.

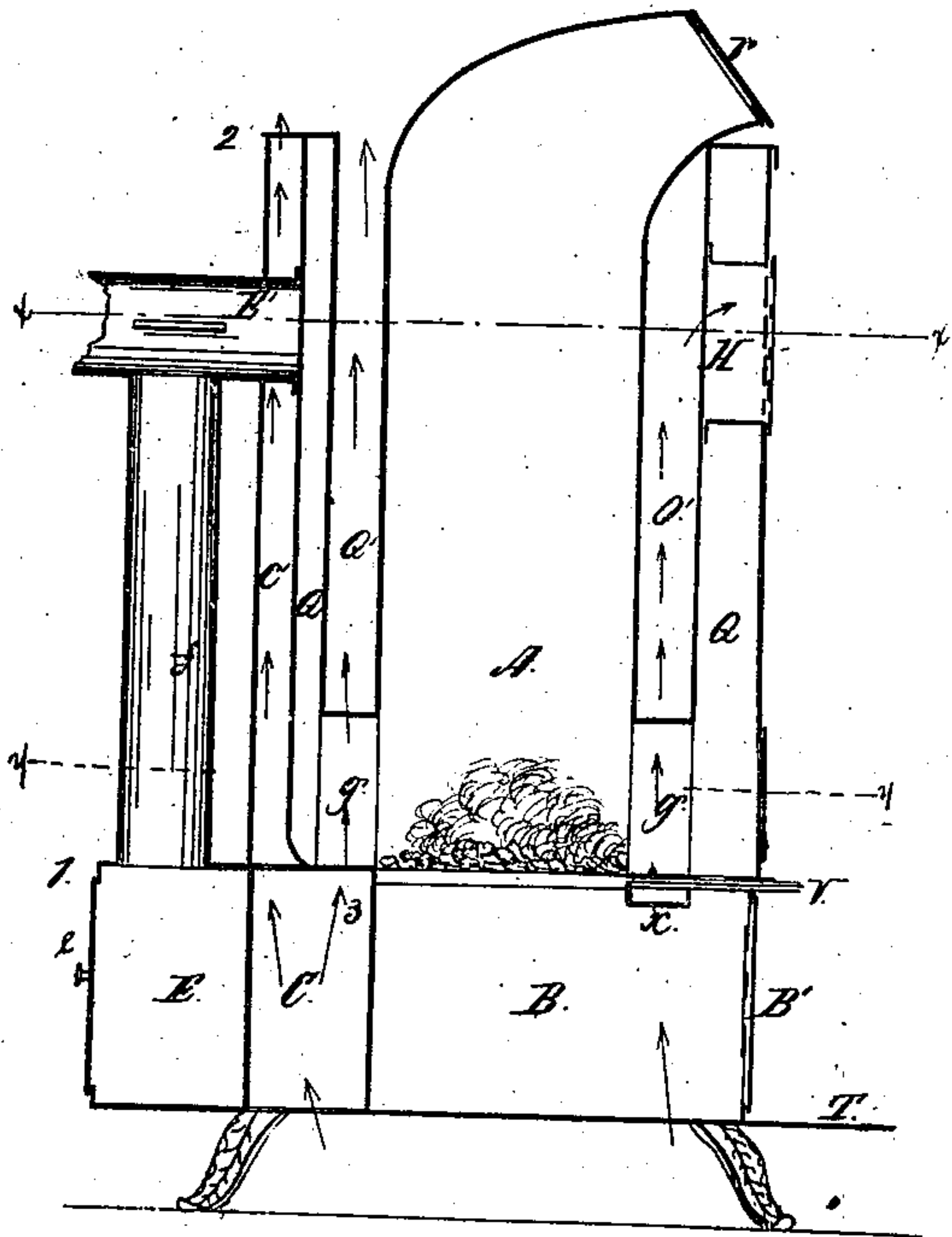


Fig. 2.

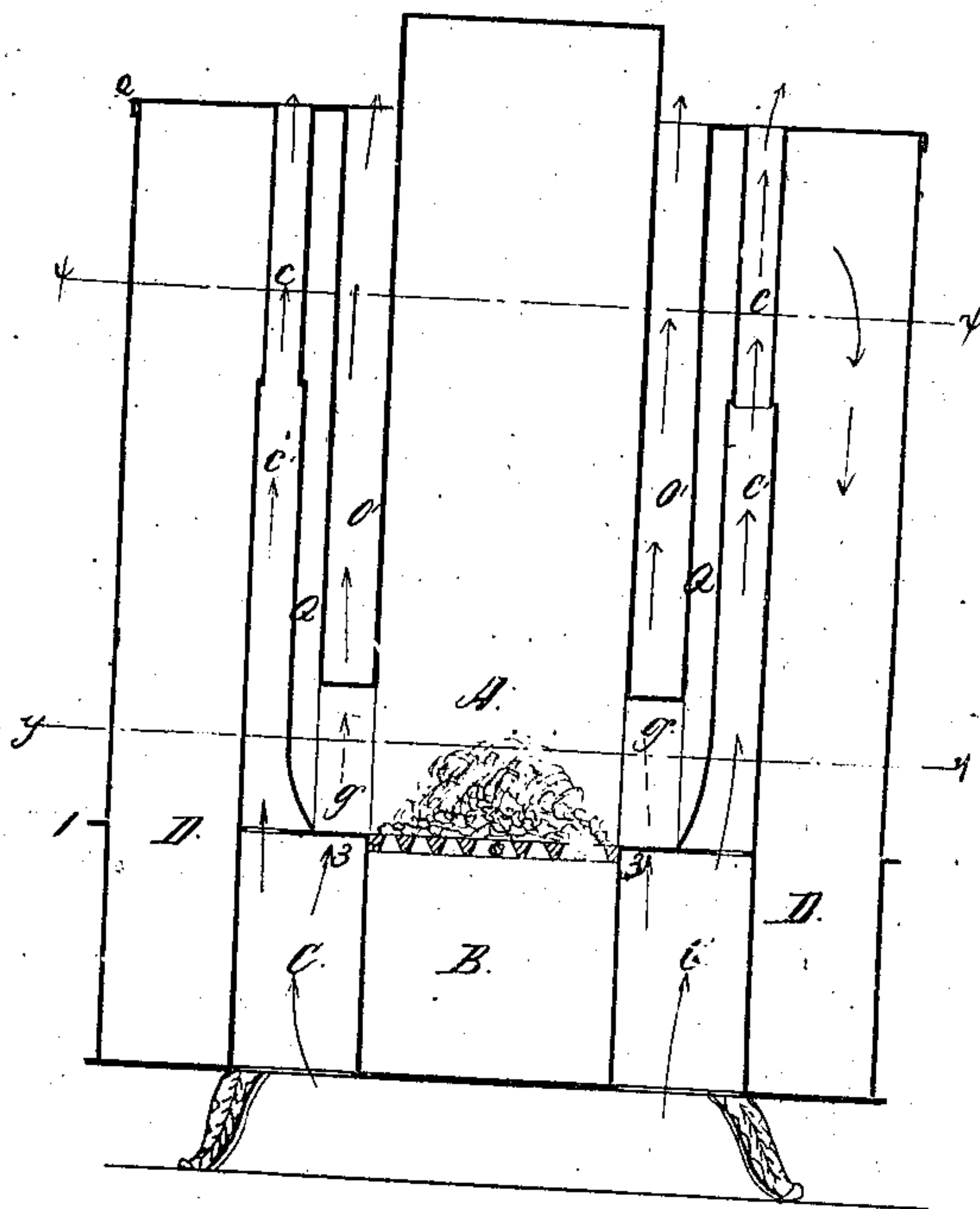


Fig. 3.

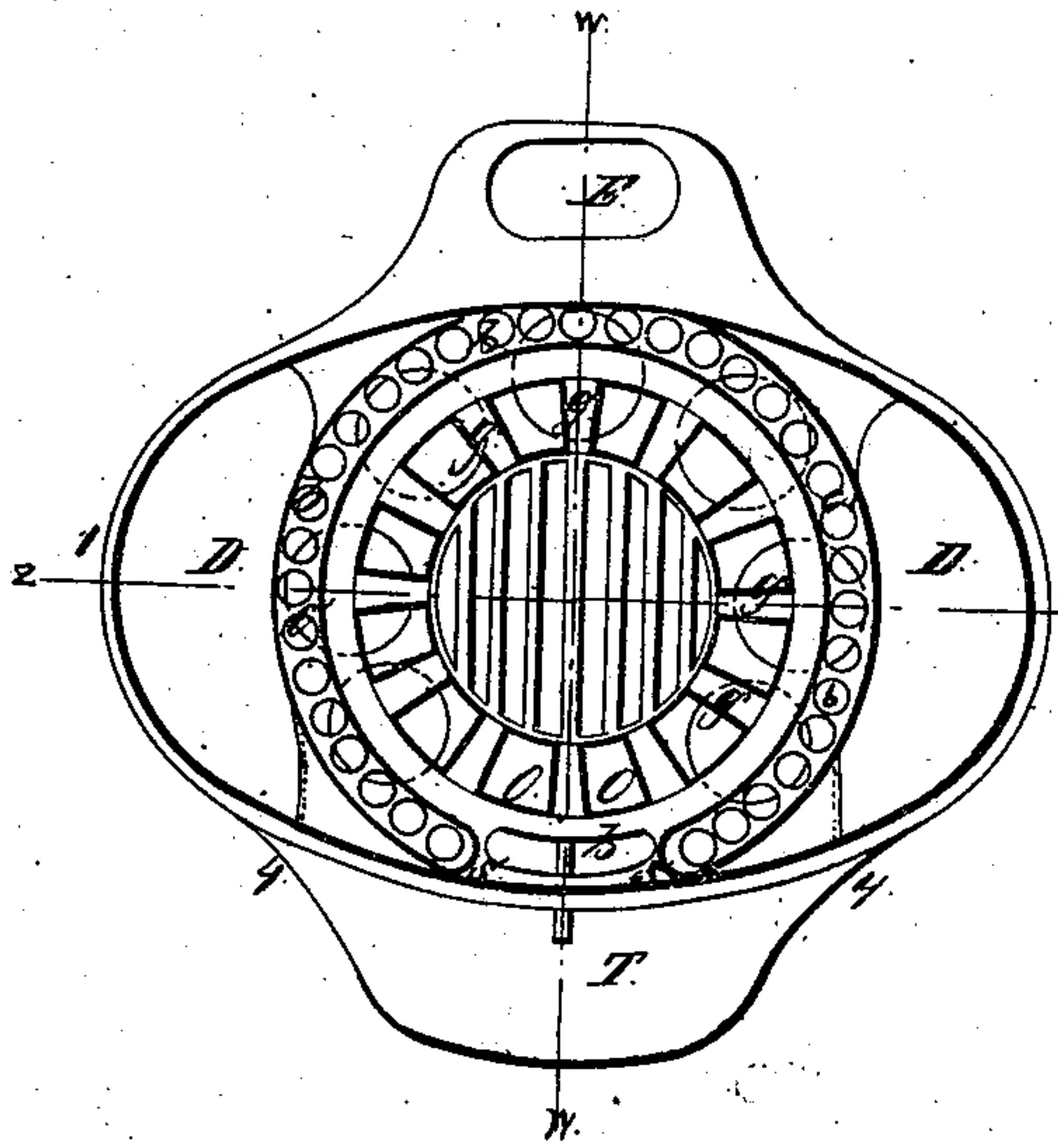
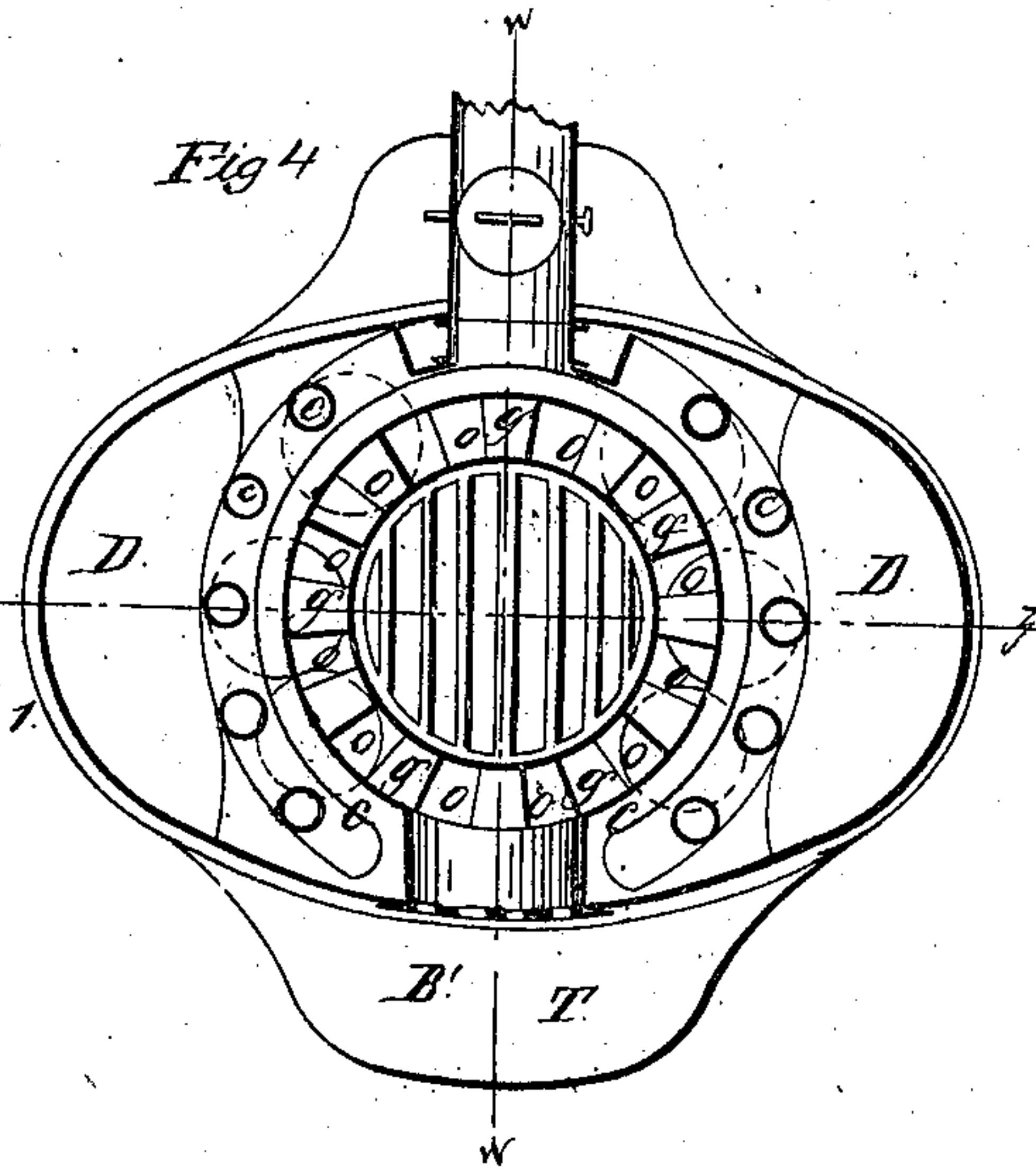


Fig. 4.



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H. F. T. HALE, OF MILWAUKEE, WISCONSIN.

IMPROVEMENT IN RESERVOIR-STOVES.

Specification forming part of Letters Patent No. 44,183, dated September 13, 1864.

To all whom it may concern:

Be it known that I, H. F. T. HALE, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Reservoir-Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 shows an elevation of my stove in section on a line, W, of Figs. 3 and 4. Fig. 2 shows another sectional elevation on a line, z, at right angles to the line W. Fig. 3 is a plan view of a section taken on a line, y, Figs. 1 and 2. Fig. 4 is a similar view at the line x.

Similar letters of reference indicate like parts.

The outer case of the stove has been left off. It is therefore drawn in the several figures in red outline, and is intended to embrace the inner parts and flues of the stove between the plates 1 and 2.

My improvement consists in an attempt to make a more economical use of the products of combustion than can be made in the stoves in common use.

A represents the fuel reservoir, the mouth of which is closed by a cover, r. The wall of my fire-pot is made of vertical hollow bars O, which are open at top and bottom to allow the free passage of air. (See the arrows marked 3.) These bars open below into the cold-air chamber C, and above into the annular chamber O', which is open above and entirely surrounds the reservoir. The chamber C is U-shaped, and surrounds the ash-pit on all sides, except its front, and is itself surrounded by the base-flue D E. Cold air from beneath the stove is allowed to enter the chamber C through holes in the bottom plate of the stove. (Marked in dotted outline in Figs. 3 and 4.) Spaces g are left between the vertical bars, O, through which the products of combustion pass into an annular chamber, Q, surrounding chamber O'. This chamber Q is closed above by the top plate, 2, and the direct-draft pipe E' opens into it, as shown in Fig. 1. Without the chamber Q is another

annular chamber, C', opening below into the cold-air chamber C and extending to the height shown in Fig. 2, where it is connected to open pipes c. (Shown in cross-section in Fig. 4, and in Fig. 2 in longitudinal section.) The chamber C does not form a complete annulus, but terminates at point 5, on the front of the stove, in line with the ash-door openings. The space thus left forms part of the flue-space Q, and an opening, b, is made through the plate 1 of the stove, so as to connect this flue-space with the ash-pit for the purpose of moderating the draft, if necessary. The hot-air pipe H also passes through this space from the hot-air chamber O', in order to furnish the means of securing a connection with pipes leading the hot air to other apartments.

The spaces between the walls of the small pipes c connect the annular chamber Q to flues D, and the products of combustion are marked in Fig. 2 as passing from one to the other. (See the red arrows.) The annular chambers D are formed by the outside case, the position of which is shown in red outline, as I have not thought it necessary to do more than indicate its location between the upper and lower plates, 2 and 1. The base-flues D are formed at the sides of the stove within the outer casing of its lower part and the outside of the annular chamber C, and they extend from the points 4 on each side of that chamber around toward the back part of the stove, until they reach the chamber E, which is merely a continuation of them. A pipe, f, connects the chamber E behind the damper. The holes b shown in Fig. 3 represent the openings from the annular chamber C' into the cold-air chamber C.

V is the bar about which the horizontal grate of the fire-pot is rocked to dump it. It passes between two flat air-channels, one of which is shown in Fig. 1 at x, the office of which is to pass the air from the cold-air chamber into the two front tubular grates, O O. (Shown in Fig. 3.) These flat tubes x, of which there are two, extend from the cold-air chamber at each side of the ash-pit, respectively, under the plates 1 and along the top of the ash pit, until they communicate a supply of air to those vertical grate-bars which are situated above the front of the ash-pit. No

such provision needs to be made for the other vertical grate-bars, for the reason that the side and end walls of the ash-pit coincide with a line projected downward from the inner faces of those bars.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the open chamber O', surrounding the fuel-reservoir, with the hollow vertical grate-bars of the fire pot, substantially as shown.

2. The combination of the hollow vertical grate-bars, the annular chamber O', and the

air-chamber O', with its range of small pipes c, substantially as shown.

3. The combination of the hollow vertical grate-bars with the flues Q, D D, and E, substantially as shown.

4. The flat air-chambers x, for supplying the front vertical grate-bars of the fire-pot with air, substantially in the manner and for the purpose herein shown and described.

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Witnesses:

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