3 Sheets--Sheet 1.

W. B. TREADWELL.

Cooking Stove and Range.

No. 161,180 Patented March 23, 1875.

Fig. 1.

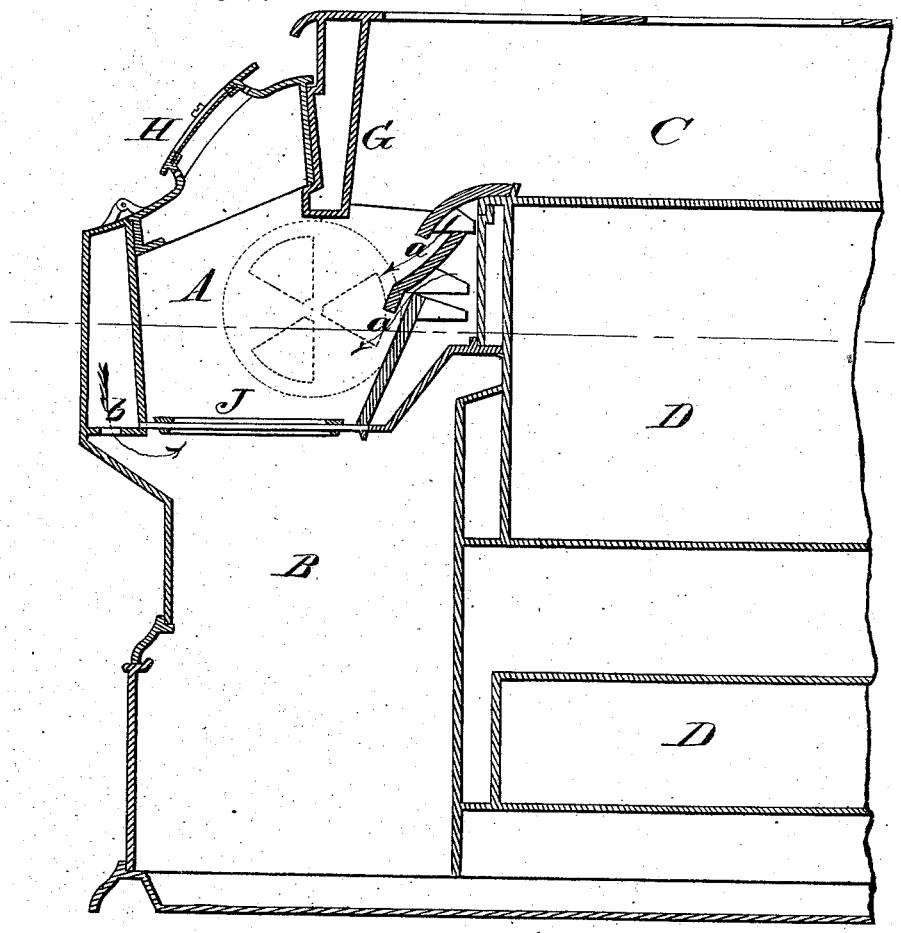

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Fig. 2

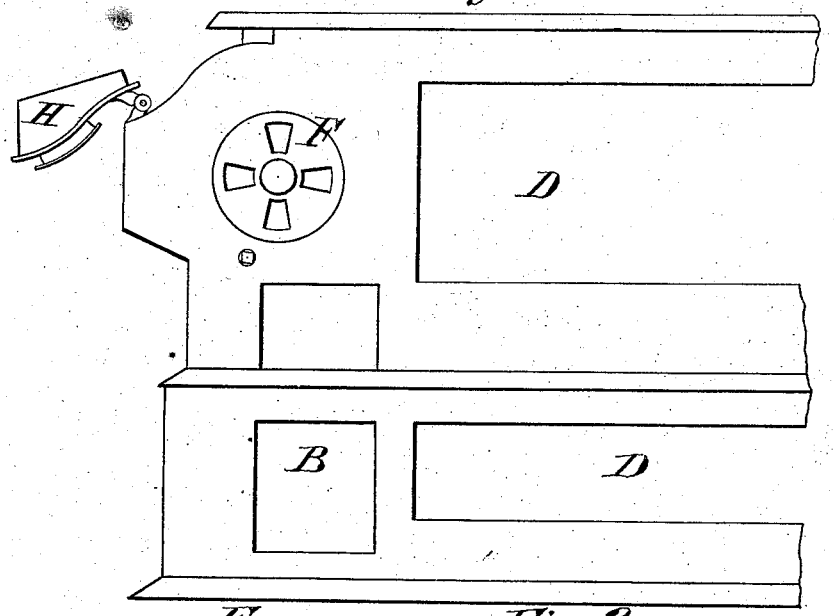

Fig. 3

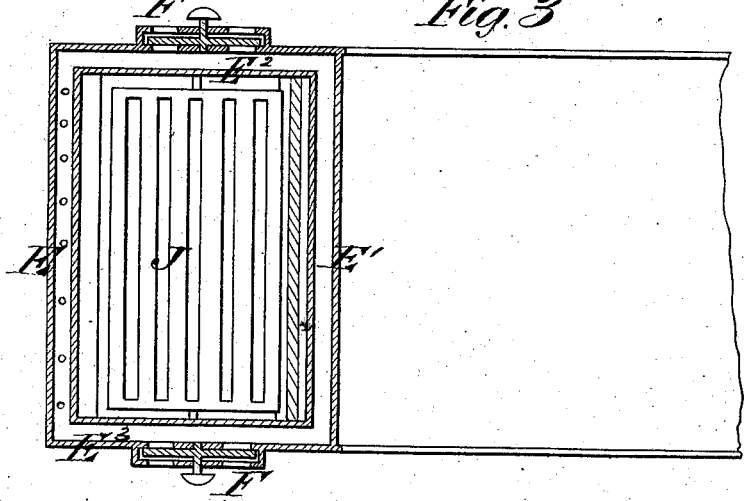

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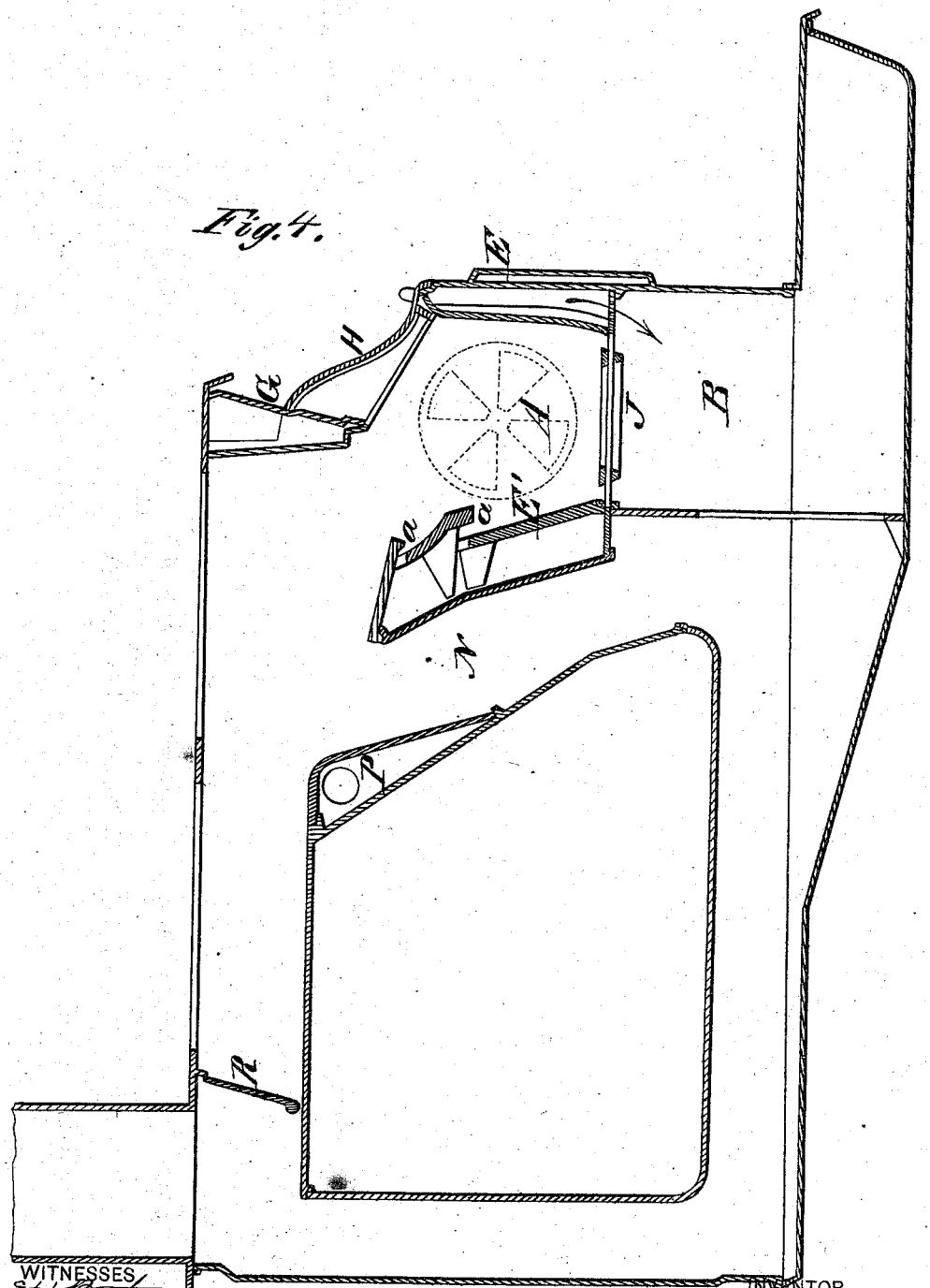
Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM B. TREADWELL, OF ALBANY, NEW YORK.

IMPROVEMENT IN COOKING-STOVES AND RANGES.

Specification forming part of Letters Patent No. **161,180**, dated March 23, 1875; application filed January 9, 1875.

To all whom it may concern:

Be it known that I, WILLIAM B. TREADWELL, of Albany, in the county of Albany and State of New York, have invented a new and valuable Improvement in Cooking-Stoves and Ranges; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a vertical detail section of my stove, and Fig. 2 is a side detail view of the same. Fig. 3 is a transverse sectional detail view, and Fig. 4 a vertical longitudinal sectional view.

This invention has relation to cooking-stoves and ranges having a front feed-opening for supplying fuel to the fire-chamber; and the nature of my invention consists in constructing the five walls which are exposed to the direct heat in the fire-chamber with air-circulating spaces in them, which spaces communicate with each other, and are provided with registers for regulating the admission of air. The air, after it is highly heated, is directed into the fire-chamber above and below the grate, for supplying oxygen to the incandescent fuel, as will be fully understood from the following description.

In the annexed drawings, A designates the fire-chamber of the stove; B, the ash-pit; C, the flue between the top plate of the oven and the top plate of the stove; and D D are two ovens, with a flue-space between them. E E^1 E^2 E^3 designate the four sides surrounding the fire-chamber A, each one of which is composed of double walls, forming air-circulating spaces between them. The outer walls of the two sides E^2 E^3 have registers F F applied to them, for admitting air into the circulating-spaces, and allowing such admission to be regulated. The inner side or fire-back E^1 has openings *a a* through its front wall, which openings are so formed that they direct the escaping air-currents downward into the fire-chamber at and near the point where the flame and heated products of combustion pass over into the flue C. At the lower end of the front air-circulating side E holes *b* are made, which afford outlets for air into the ash-pit, from which latter the air rises through the grate J into the fire-chamber.

It will thus be seen that I introduce air below the grate, as well as above the grate.

The four air-spaces above described communicate with each other, and they also communicate with a double-wall air-chamber, G, which forms that portion of the front wall of the stove which is above the fire-chamber. (Shown in Fig. 1.) H designates the door to the feed-opening, the ends of which are hollow, and communicate with the external atmosphere by means of suitable openings. Between these hollow ends mica is applied by securing the sheet between two frames, and confining these frames to the door, so as to leave spaces for the entrance of air.

Fig. 4 on Sheet 3 shows my invention applied to a stove having flues entirely around the ovens, so that when a damper, R, is in a horizontal position the products of combustion will descend through flue N, and pass chiefly beneath the upper oven. When the damper R is in a vertical position the products of combustion will pass both above and below the ovens.

P designates a chamber, which is applied to the upper front angle of the oven, and which affords a passage for air and a protector for this part of the oven.

What I claim as new, and desire to secure by Letters Patent, is—

The air-chamber G above the fire-chamber, and communicating with the end air-chambers E^2 E^3, provided with registers F, in combination with the front air-chamber E, having at its bottom perforations *b*, and back air-chamber E^1, provided with air-passages *a a*, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM B. TREADWELL.

Witnesses:

JOSEPH H. SLOAN,

ROBERT H. BULLOCK.