Sheet 1 - 2 Sheets.

W. B. Treadwell.

Cooking-Stove

No. 72938

Patented Dec. 31, 1867.

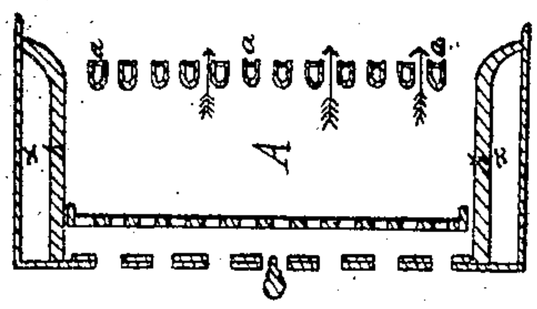

Fig. 3.

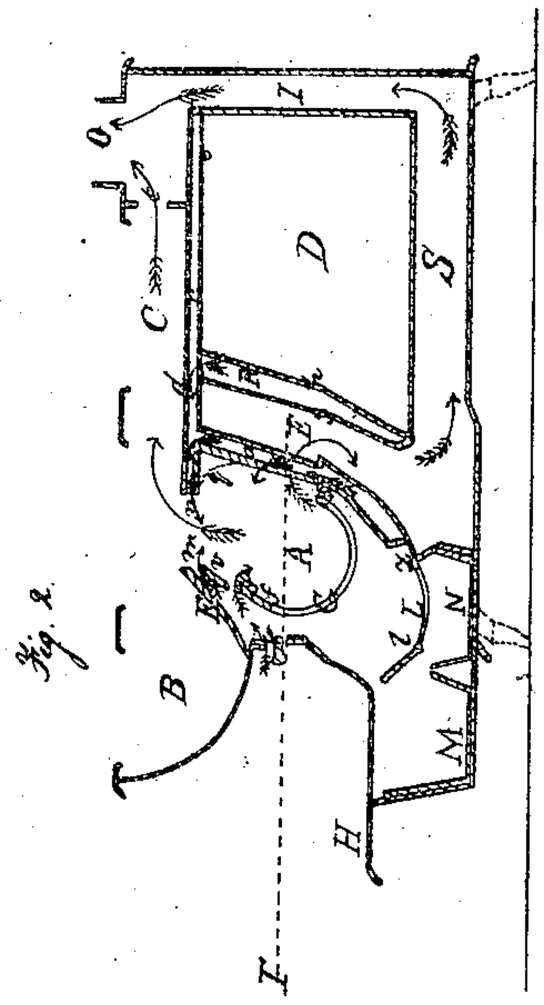

Fig. 2.

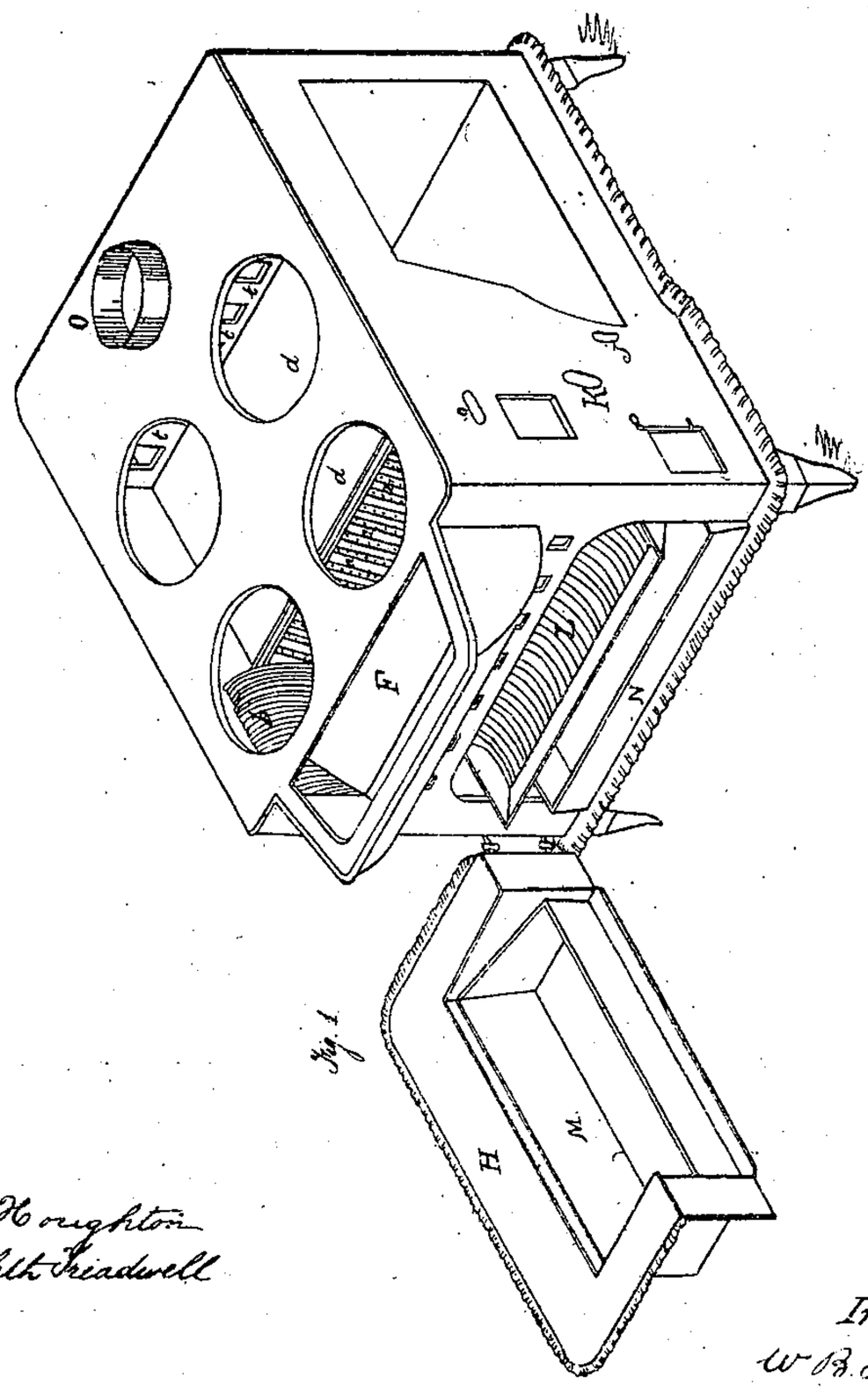

Fig. 1.

Witnesses.

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Sheet 2 2 Sheets.

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Fig. 6.

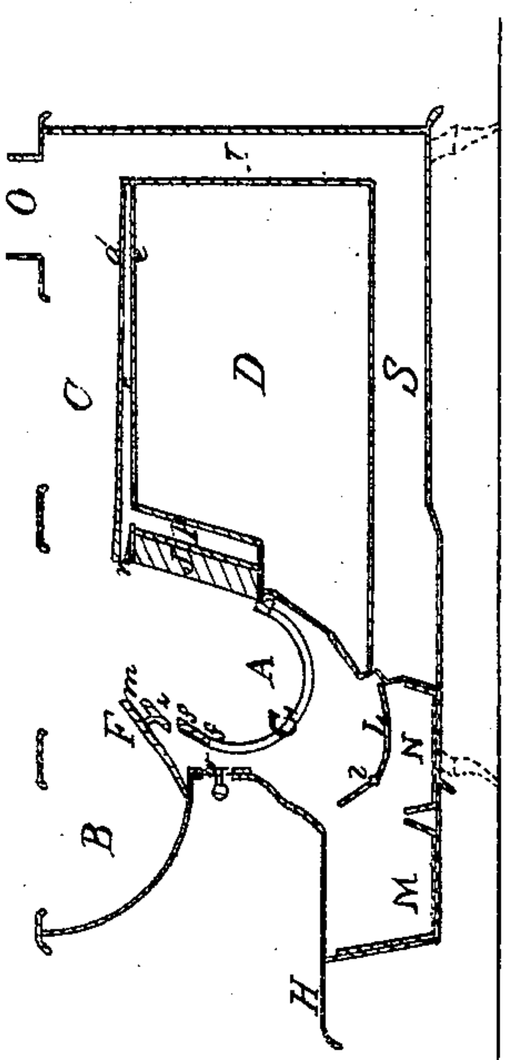


Fig. 5.

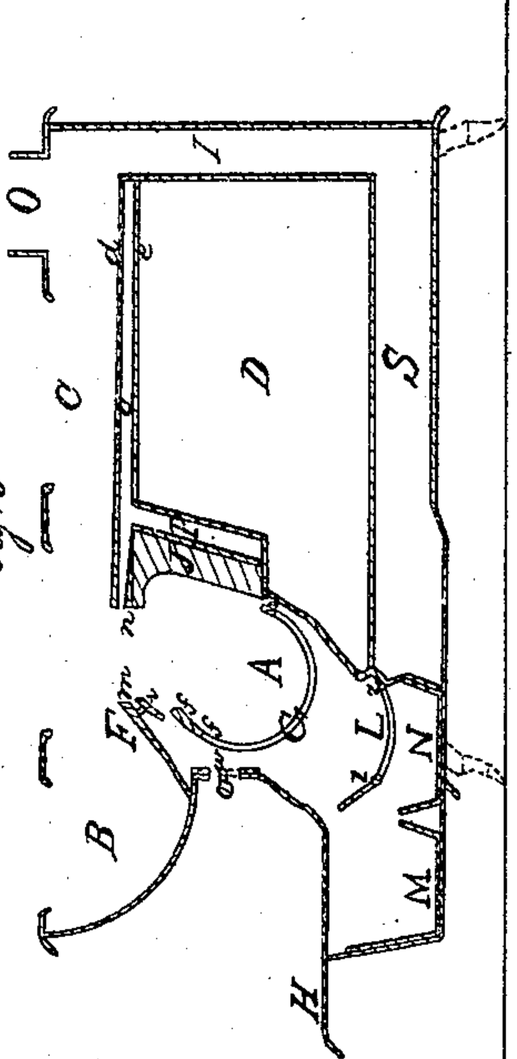


Fig. 7.

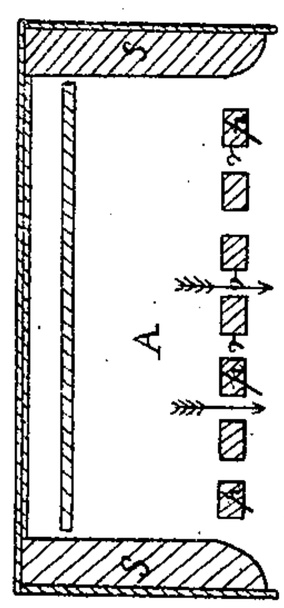
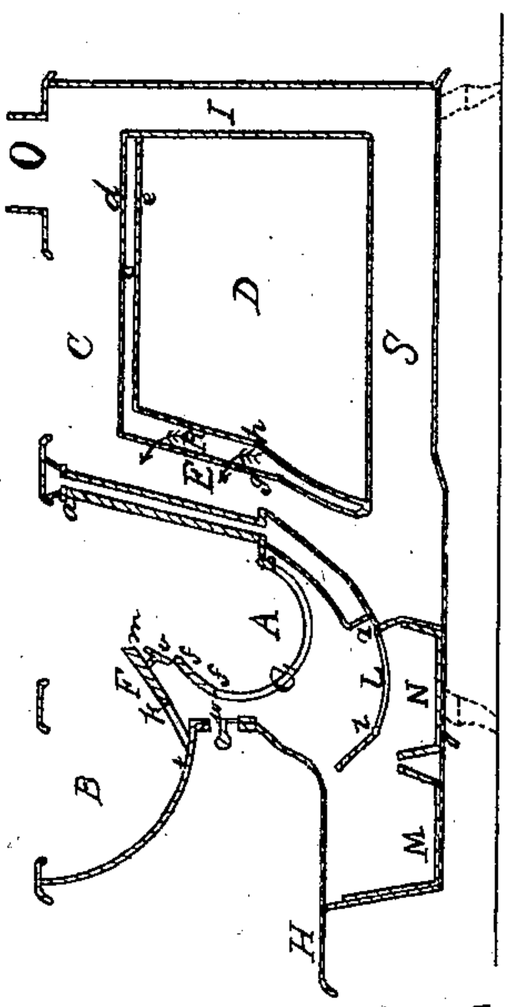


Fig. 4.



Witnesses
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United States Patent Office.

WILLIAM B. TREADWELL, OF ALBANY, NEW YORK.

Letters Patent No. 72,938, *dated December* 31, 1867.

COOKING-STOVE.

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

TO WHOM IT MAY CONCERN:

Be it known that I, WILLIAM B. TREADWELL, of the city and county of Albany, and State of New York, have invented a certain new and useful Improvement in Stoves, particularly adapted to the construction of cooking-stoves for the burning of bituminous coal; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, the same letter in each of the several figures marking the same part of the stove. In the accompanying drawings—

Figure 1 is a perspective view of my invention, with hearth swung off from the stove.

Figure 2 is a vertical section through the centre of the stove from front to back.

Figure 3 is a horizontal section of the fire-chamber, taken on the plane of the red line T in fig. 2.

The nature and object of my improvement are threefold: first, I seek, by the proper application of air to the several parts of the fire, or its introduction into the fire-chamber, to burn more perfectly bituminous coal in cooking-stoves, so as to consume the smoke and gases which arise therefrom during the ordinary process of burning; second, to so construct stoves as to avoid revertible flues; third, to separate the coal from the ashes and refuse matter which have dropped from the fire-chamber with as little trouble and inconvenience as possible; all of which I have accomplished in the improvement hereinafter particularly described.

The great desideratum in the construction of a stove for the perfect combustion of the fuel employed is to so apply the air, and in such quantities, as to supply necessary quantities of oxygen at the particular points needed for combustion. The quantity must be sufficient to furnish the necessary amount of oxygen, and at the same time not too much to absorb the heat and choke the passage through the escape-flues, thus affecting unfavorably the draught of the stove.

In my improvement I have carefully provided for the appropriate supply of air at the points of combustion. By an examination of figs. 1 and 2, my provisions in these respects will be seen.

In fig. 1, these provisions are seen in the tubes *a a a a*, as seen in the back of the fire-pot through the opening in the top of the stove. These tubes are perforated as represented by the black points or dots, as seen in fig. 1. The object of these perforations is to allow the air which is admitted to these tubes to escape into the fire-pot in small streams or jets among and upon the solid burning fuel. This is to supply that part of the fuel lying against the back part of the fire-pot with air, which is admitted to these tubes through an opening in the side of the stove seen at K in fig. 1. Air is also admitted to the front and upper surface of the burning fuel in the fire-pot through a passage formed by plates F and *v*, and by the grate G, as seen and exhibited at *m* and *f*, in fig. 2, the course of the air being indicated by the red arrows at *m* and *f*. The air is supplied to these openings through damper-plates seen under the feed-place B in fig. 1, and represented at damper *w* in fig. 2. Air is applied to the fire-chamber at the back part of the fire-chamber, and at the upper part of the fuel, through openings between the plates seen in fig. 1, at *n*, and represented in fig. 2 by the red arrow entering the fire-pot at *n*. The air is supplied to these openings by means of a chamber connecting with the same, having its outward orifice at *j*, as seen at fig. 1, as well also as by means of air from the tubes in the back of the fire-pot, as seen in fig. 2, and represented by tube *a*. Air is also supplied at the bottom of the fire-pot through the grate G, as seen in fig. 2. In this manner every part of the fuel in the fire-pot is supplied with the requisite amount of oxygen to facilitate the combustion thereof.

I construct my stove, to accomplish my second purpose, that is, to avoid revertible flues, as follows: This is particularly exhibited in fig. 2, representing a vertical section of the stove, in which are seen the feed-place B, the fire-chamber A, the escape of the products of combustion, as indicated by the black arrows, from the top of the fire-chamber into the space C formed by the top of the oven D and the top plate and the covers of the stove, connecting with the escape-flue at O, forming a heating-current over the top of the oven. The products of combustion also pass out between the tubes forming the back of the fire-pot, entering the space E, between the fire-pot and the oven D, and passing thence underneath and up the back of the oven, connecting with the same escape-flue at O, thus forming a heating-current underneath and around the sides of the oven. In this way my flues are direct, and yet they encircle the oven, heating equally every part thereof.

The third branch of my improvement consists in separating the coal from the refuse matters which have

dropped from the fire-chamber upon and into the separator. This separator or sifter is seen in figs. 1 and 2, and is represented by letter L. This sifter is situated beneath the grate G to receive the coals, ashes, and other refuse matter which may fall or be dumped upon it. By means of a hook acting upon the shaft *l*, the sifter may be vibrated to separate the ashes from the coal. After this sifting has taken place, the sifter is dumped into the box M, by means of a lever acting upon the shaft *l;* the ashes are collected in the box N. Thus the coals are separated from the ashes without any inconvenience, and with little labor.

In the drawing, fig. 1, H is the hearth of the stove, made separate from the stove, and attached to it by means of a hinge, so that it may be closed and opened at pleasure. The box for the coal separated from the ashes is placed in the hearth H, as seen in fig. 1, and represented in fig. 2, at M.

Having thus fully described my improvement, I will proceed to describe what I claim as my invention, and desire to secure by Letters Patent.

1. I claim grate G, combined with plates F and *v*, constructed substantially in the manner and for the purpose above described.

2. I claim grate G, plates F and *v*, in combination with plates *d* and *e*, for introducing air at *m* and *n*, constructed substantially in the manner and for the purposes above described.

3. I claim the fire-chamber, constructed as above, in combination with the sifter L, substantially in the manner and for the purposes above described.

4. I claim the sifter L, in combination with the boxes M and N and the grate G, substantially in the manner and for the purpose above described.

5. I claim the hearth H, constructed substantially in the manner and for the purpose herein described.

W. B. TREADWELL.

Witnesses:

THOS. HOUGHTON,

ELIZABETH TREADWELL.