I. De HAVEN.

Heating Stove.

No. 108,459. Patented Oct. 18, 1870.

Fig. 1

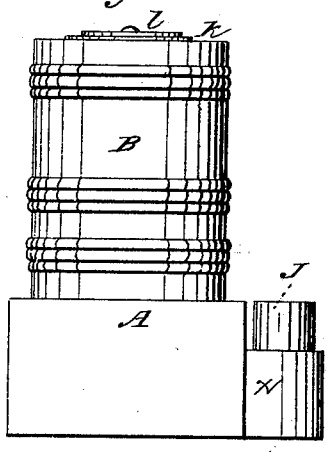


Fig. 2

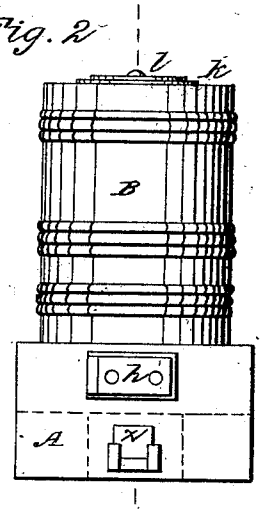


Fig. 3

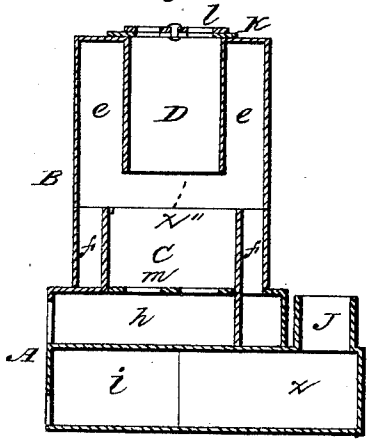
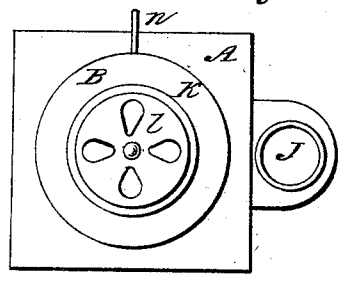


Fig. 4



Witnesses
Chas Hadaway.
Geo. H. Thomas

Inventor
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ISAAC DE HAVEN, OF ALLEGHENY CITY, PENNSYLVANIA.

Letters Patent No. 108,459, dated October 18, 1870.

IMPROVEMENT IN HEATING-STOVES.

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

To all whom it may concern:

Be it known that I, ISAAC DE HAVEN, of the city and county of Allegheny and State of Pennsylvania, 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, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The nature of my invention consists in the arrangement of a fuel-chamber, fire-chamber, heat-chamber, and flues, constructed, arranged and operating as hereinafter described.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawing which forms part of my specification—

Figure 1 is a side elevation of my improvement in heating-stoves.

Figure 2 is a front elevation of the same.

Figure 3 is a vertical section of the same when cut through at line *y* of fig. 2.

Figure 4 is a top view or plan of the stove:

In the accompanying drawing—

A represents the base of the stove, which is provided with an ash-box, *h*, flues *i*, gathering-chamber *x* for heat, dust, and smoke, and pipe J.

Upon the base A is a case, B, which is provided with a fire-chamber, C, and its grate *m*, and also with a fuel-chamber, D, and its lid K, which is provided with a pivoted register, *l*.

As the construction and arrangement of the several parts of my improvement will be readily understood from the foregoing description, and by reference to the accompanying drawing, I will therefore proceed to describe the operation, which is as follows:

The lid K is removed from over the fuel-chamber D; a fire is kindled in the fire-chamber C; the chamber D is then filled with the desired fuel, and the lid K is then placed over the chamber D, as shown in the accompanying drawing.

The smoke and heat will pass over the upper edge of the walls of the fire-chamber C, and pass down through the flue *f f* into the flues *i*, and then back into the chamber *x*, from which it passes out through pipe J.

When the fire in chamber C has thoroughly ignited the fuel in it, and that portion of it which is at and in the lower end of the chamber D, then the inlets of air in the front plate of the ash-box are partly closed, and the register *l* in lid K is opened, which will cause air to pass down through the fuel in chamber D, which will heat it, and the heated air coming in contact with the smoke will cause it to burn.

The heat of the fire will rise up in chamber *e*, and is radiated into the room by the case B of the stove.

It will be observed that the stove has a double draught of air, one up through the fire-grate *m*, and the other down through the fuel in chamber D; these two draughts meet at *x''*, and thereby cause the greatest heat to be at that point, so that the air, before coming in contact with the smoke, is heated to a very high degree, which gives to it a property which will aid greatly in the consumption of the smoke.

By constructing the stove as hereinbefore described, the heat is diffused through all parts of the stove, and a large portion of the heat passes down through the base A, whereby that portion of the stove which is next the floor of the room radiates its proper portion of heat.

The arrangement of flues *i* in the base causes the heat and smoke to pass in a thin and continuous sheet over the top of the walls of the fire-chamber C equally at all points, so that the heated air, coming up through the grate *m* and down through the fuel in the chamber D, is distributed in such manner as best adapted to aid and insure perfect combustion.

The fuel, as it burns down in chamber C, sinks down in chamber D, so that the fire is constantly supplied with heated fuel.

When it is desirable to reduce the heat of the stove, the inlets of air are closed or partially closed.

The grate is cleaned by moving the lever *n* sidewise, imparting to it a reciprocating motion.

Having thus described the nature, construction, and operation of my improvement,

What I claim as of my invention is—

The arrangement of the chambers D C *e*, register *l*, and flues *f i* and chamber *x*, constructed, arranged, and operating as herein described, and for the purpose set forth.

ISAAC DE HAVEN.

Witnesses:

GEO. H. THOMAS,

JAMES J. JOHNSTON.