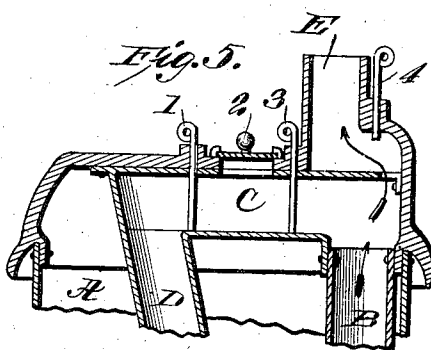
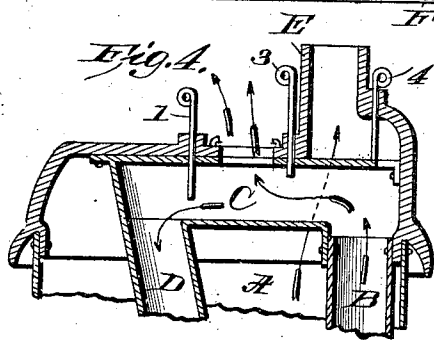
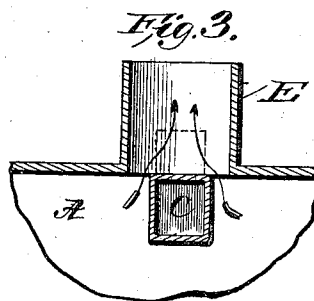
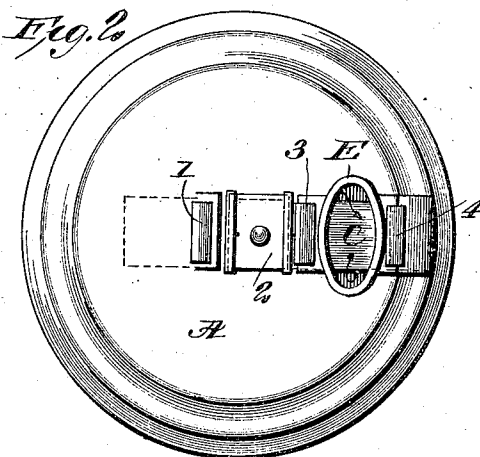
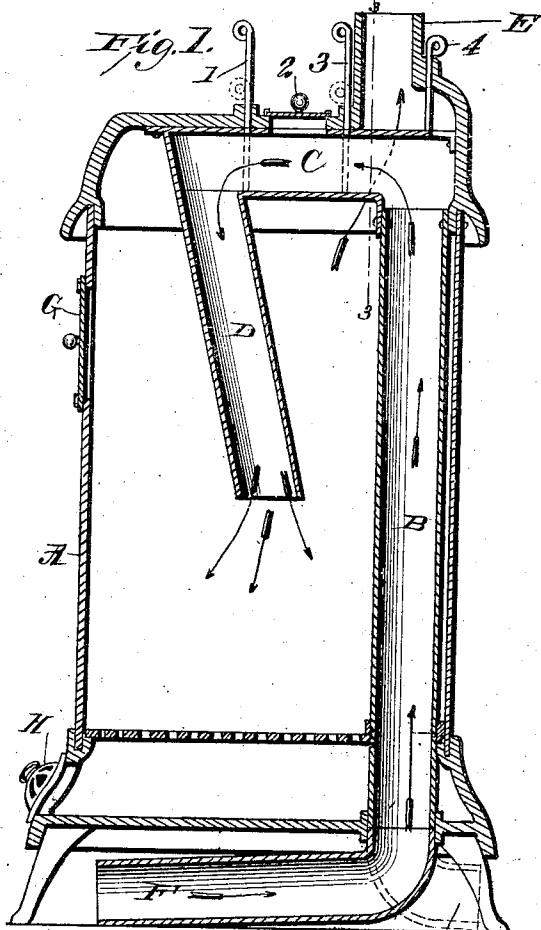


No. 844,292.

PATENTED FEB. 12, 1907.

L. H. THURSTON.
HEATING STOVE.

APPLICATION FILED SEPT. 5, 1906.



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UNITED STATES PATENT OFFICE.

LLEWELLYN H. THURSTON, OF BELT, MONTANA.

HEATING-STOVE.

No. 844,292.

Specification of Letters Patent.

Patented Feb. 12, 1907.

Application filed September 5, 1906. Serial No. 333,332.

To all whom it may concern:

Be it known that I, LLEWELLYN H. THURSTON, a citizen of the United States, residing at Belt, in the county of Cascade and State of Montana, have invented a new and useful Improvement in Heating-Stoves, of which the following is a specification.

My invention is in the nature of a new heating-stove, applicable for heating stoves and furnaces of all kinds, and to which I have given the name of "oxygen blast." It is designed to secure a more economical use of fuel, a thorough heating of the lower stratum of air in the room, and a perfect ventilation of the room with removal of foul air.

It consists in the novel construction and arrangement of an intake-pipe which supplies air to the fuel to effect combustion, and which same pipe also serves as a heating-pipe for air which may be discharged into the room to heat it, and which pipe is also so connected with the smoke-pipe as to utilize it for the purpose of ventilating the room even when there is no fire in the stove, these results being attained by the arrangement of dampers in connection with said intake-pipe, as hereinafter fully described.

Figure 1 is a vertical section of the stove; Fig. 2, a plan view of the same. Fig. 3 is a section on line 3 3 of Fig. 1, and Figs. 4 and 5 are details showing different positions of the dampers for the different uses of the stove.

Referring to Fig. 1, A represents the body or casing of the stove, which may be of any suitable pattern, either for wood or coal, and having a fuel-door G and an ash-door H.

B is an air-pipe arranged vertically in the back of the stove in the fire-space. This pipe at the bottom descends through the center of the bottom of the stove and terminates in an intake-mouth F on a level with the floor, which mouth is normally open, but may have a damper or cover, if desired, and may be fashioned into any ornamental shape. The lower end of the air-pipe B may have a second intake-mouth F', if desired.

The upper end of the air-pipe B connects with a horizontal pipe-section C, which extends over toward the front of the stove and at its front end connects with a down-dipping pipe D, which at its lower end is deflected slightly to the rear to be out of the way when charging fuel. This dipping or pendent pipe D terminates at its lower open end a few inches above the highest level of the fire and

is the means by which the fuel is supplied with oxygen to support combustion. The horizontal upper section C of the air-pipe passes directly across the outlet of the smoke-pipe E, (see Figs. 2 and 3,) so that the smoke and products of combustion pass on each side of the air-pipe C and just before escaping to the chimney impart to the air in the pipe the heat contained in said smoke and gases.

At points along the front part of the pipe C between the pendent pipe D and smoke-pipe E there are three dampers 1 2 3. Dampers 1 and 3 slide vertically in guideways through the top of the stove and serve to close or partially close pipe C at two points or to open the same. Between the two vertically-sliding dampers 1 and 3 is an opening in the top of the stove covered by a horizontally-sliding damper 2, arranged in guideways on top of the stove. This damper controls communication between the air-pipe and the outer air at a point above the stove. At the lower end of the smoke-pipe E there is also an opening communicating with the air-pipe B and controlled by a vertically-sliding damper 4, extending in ways through the top of the stove.

The operation of my stove for the various uses described is as follows: For burning at full capacity dampers 1 and 3 are open and 2 and 4 are closed, as in Fig. 1. The full volume of air entering the open mouth F rises through the pipe B C and being heated descends through pendent pipe D and blows down directly upon the fuel in a manner to promote the most active combustion, the smoke and gases passing out on both sides of pipe C to the smoke-pipe E. It will be seen that the air taken into the stove comes directly from the cold air on the floor, which is richest in oxygen, and except when contaminated by carbonic-acid gas, and in that case the foul gases are taken out of the room as hereinafter described. If it is desired to reduce the combustion and throw more of the heat in the room, the damper 2 is opened and damper 1 is partially closed, as in Fig. 4. In this position sufficient air will descend through pipe D to maintain combustion, while the bulk of the hot air will escape through damper 2 into the room. Carrying this result to its limit, as in keeping fire over night or in weather only moderately cold, the damper 1 may be entirely closed, and then all the air entering pipe B C will be dis-

charged into the room, and the combustion of the fuel will proceed very slowly or scarcely at all, only keeping the fire alive, as in the ordinary air-tight stove. If it is desired to ventilate the room, damper 4 is opened, and then the draft up the smoke-pipe will draw the foul and heavy air from along the floor up through pipe B directly to the chimney. This damper may also be manipulated to check the draft from the fire, and even when there is no fire in the stove, as in summer-time, dampers 1 or 3 may be closed and damper 4 opened, as in Fig. 5, and then the natural draft of the chimney will ventilate the room by drawing off the air from the bottom.

It will be understood that the four dampers may be adjusted to other combinations than those described to modify the draft, improve or depress the combustion, or regulate the ventilation.

In carrying out my invention I may in some cases dispense with damper 3, as damper 1 may be made to take its place in many of the adjustments.

As shown, the dampers 1 and 3 are arranged to slide vertically; but it will be understood that I do not confine myself to this movement, as they may be arranged to slide horizontally or turn axially in any of the well-known ways.

I claim—

1. A heating-stove having within its heating-chamber an air-pipe opening at its lower end at the lower part of the stove into the outer air and having its upper end extended horizontally part way across the top of the stove and then extended down and terminating above the fire, a damper arranged to close the horizontal air-pipe and a second damper arranged to open the horizontal air-pipe to the outer air, said latter damper being located between the first-named damper and the inlet end of the air-pipe.

2. A heating-stove having within its heating-chamber an air-pipe opening at its lower end at the lower part of the stove into the outer air and having its upper end extended horizontally part way across the top of the stove and then extended downwardly and terminating above the fire, and four dampers; two arranged to close the horizontal portion of the air-pipe, one arranged between said last-named dampers to control communication with the outer air, and another arranged to control communication between the air-pipe and smoke-pipe.

LLEWELLYN H. THURSTON.

Witnesses:

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