(No Model.)

L. LENTZ.

OVEN FOR VAPOR OR GAS STOVES.

No. 589,972. Patented Sept. 14, 1897.

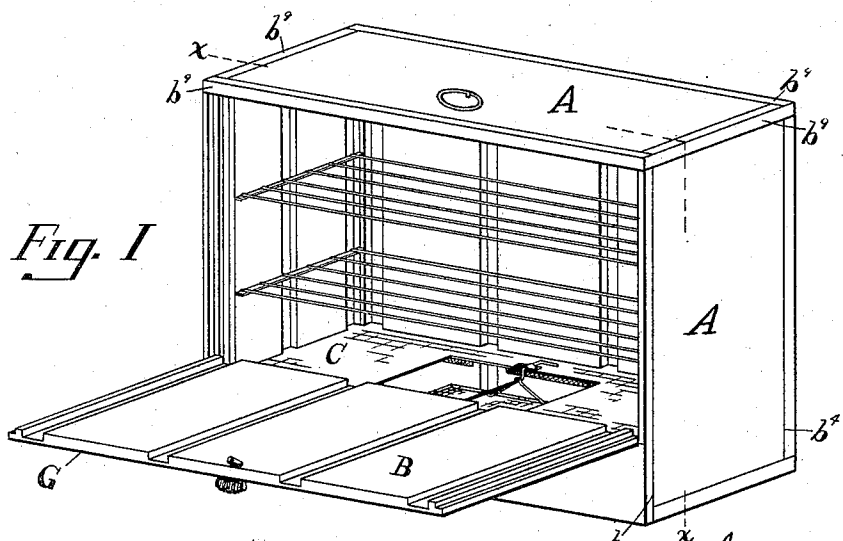


Fig. 1

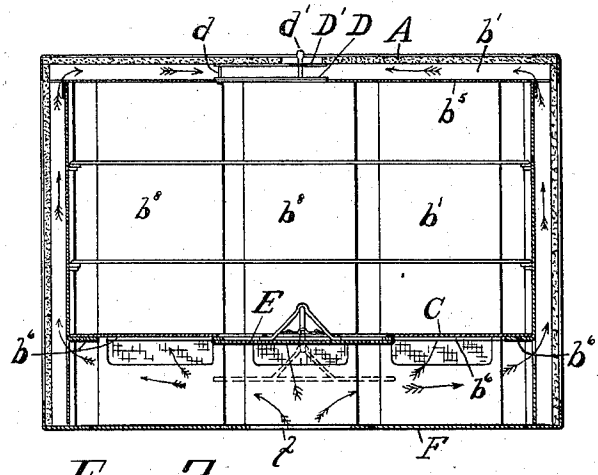


Fig. 2

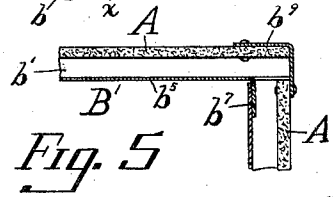


Fig. 5

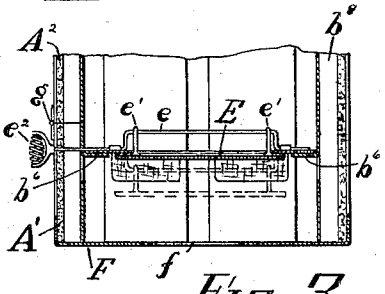


Fig. 3

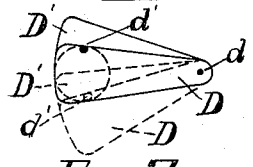


Fig. 7

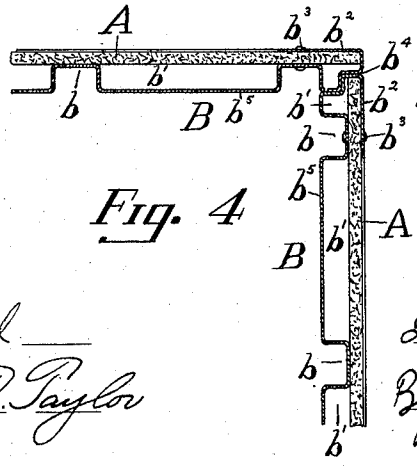


Fig. 4

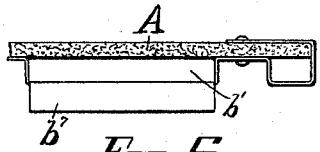


Fig. 6

WITNESSES

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LUDWIG LENTZ, OF COVINGTON, KENTUCKY.

OVEN FOR VAPOR OR GAS STOVES.

SPECIFICATION forming part of Letters Patent No. 589,972, dated September 14, 1897.

Application filed February 21, 1896. Serial No. 580,178. (No model.)

To all whom it may concern:

Be it known that I, LUDWIG LENTZ, a citizen of the German Empire, and a resident of Covington, in the county of Kenton and State of Kentucky, have invented certain new and useful Improvements in Ovens for Vapor or Gas Stoves, of which the following is a specification.

My invention relates to that class of ovens for use in connection with vapor or gas stoves the outer walls of which are composed of asbestos or similar non-conducting material.

The object of the invention is to provide a secure means for holding the asbestos walls and door and providing communicating live-air chambers in the end and top walls and means for controlling and directing the heated air or vapors through said chambers and excluding them from the oven or admit the vapors to the oven and allow the heat from the oven to escape when desired. I attain these objects by the means illustrated in the accompanying drawings, in connection with which the invention will be first fully described, and then particularly referred to and pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective view of my improved oven with the door thrown open and the valve in the bottom of the oven thrown down to admit vapors from the stove directly to the oven. Fig. 2 is a longitudinal vertical section through line $x\ x$ of Fig. 1, looking toward the back of the oven, with the oven-valve shown closed in full line and in dotted line in the same position it occupies in Fig. 1. Fig. 3 is a detailed view of the lower part of the stove, in transverse vertical section, with the door closed. Fig. 4 is a detail view, in horizontal section, upon an enlarged scale, showing the vertical joints of the oven. Fig. 5 is a detail view, in vertical section, upon an enlarged scale, of one of the top and end corners, illustrating the binding-frame holding the back, top, and end walls together. Fig. 6 is a detail view, in end elevation, of the top of the oven. Fig. 7 is an inverted plan view of the valves or registers controlling the supply of heat to the oven and permitting the heat and vapors from the oven and air-chambers to escape to the open air when desired.

Referring to the parts by reference-letter, A represents sheets of asbestos or other non-conducting material; B, sheet-metal frames which hold the asbestos sheets that form the ends and back of the oven and the air-chambers between the oven and the asbestos covering. The sheet B has ends b to bear against the inner face of the asbestos sheets to support them and also forming the air-chambers b'. The vertical edges of the sheets B are turned around in a vertical bend b^2, forming grooves into which the asbestos sheets are slipped and held by rivets b^3, passing through the outer bend b^2, the asbestos sheet, and the inturned bend b, as clearly seen in Fig. 4, the metal being bent at the edges to form the angular interlocking joint b^4. The larger loops b^5, which form the air-chambers b', have inturned flanges b^6 struck up from them, forming the perforations for the heated air to pass through the air-chambers, these lugs furnishing a support for the bottom shelf C of the oven.

The top of the oven, as seen in Fig. 6, has its asbestos wall supported by a sheet-metal plate B', which is formed similar to the sheets B, except that the part b^5 has a downturned flange b^7, which enters the top of the chamber b' in the end walls. The flange being turned down from the metal, opens a communication between the chamber b' in the end walls and the top chamber, thus furnishing continuous air-chambers around the ends and top of the oven-walls for the heated vapors. The front chamber b' of the top and the top asbestos plate are perforated and provided with registers by which the heated vapors passing through said chamber may be conducted into the oven or the vapors from the oven and heated vapors in the chambers conducted to the open air, as desired. This arrangement is shown in Figs. 2 and 7 and will now be described.

D and D' are the register-valves, D controlling the opening through the chamber-wall b^5 and D' controlling the opening through the asbestos sheet. These valves are connected by the pivot d, which turns in the metal wall b^5, and by the handle d'. The valves D and D' are so arranged that the valve D opens in advance of the valve D', so that when it is desired to throw the heated vapors into the oven a partial movement of the handle d' will

open the valve D without uncovering the opening in the asbestos sheet, and if it is desired to allow the vapors from the oven and the heated vapors from the air-chamber to pass to the open air, a further movement of the handle d' partially uncovers the opening in the asbestos sheet and fully uncovers the opening from the oven, as seen in diagram view, Fig. 7.

It is often desirable to admit the vapors from the flame directly to the oven and at other times to exclude them and heat the oven by radiation from the inner walls. The means by which these different results are attained I will now describe.

The shelf C has a central rectangular opening through it adapted to be opened or closed by a swinging plate or valve E. This valve is hung upon a crank-shaft e by means of hangers e'. The inner end of the crank-shaft is journaled in a lug upon the bottom or shelf C and has an angular bend outside of its journal to stop the rotation of the shaft in its lower position, as clearly seen in Fig. 1. The forward end of the crank-shaft extends through the front wall of the oven and is provided with a handle e^2, by which the crank-shaft is rocked. (See Fig. 3.) By throwing the crank portion of the shaft to its highest position the valve or plate E closes the bottom, so that the heat from the burner must pass around the oven, through the live-air chamber b', and also the dead air chamber b^8 at the back of the oven, as seen in full line, Figs. 2 and 3. When it is desired to admit the heated vapors from the burner through the oven, the crank portion of the shaft is thrown to its lower position, the plate E then acting as a deflector. In this position the bottom plate C is open, as seen in full line, Fig. 1, and in dotted lines, Figs. 2 and 3. The bottom of the oven F is a plain sheet of metal, having its forward end turned up to the lower edge of the door-opening and around the inner asbestos strip A', the rear and end walls being turned over the asbestos plates A. This lower plate is centrally perforated at f to sit over the burner.

The back of the oven is formed like the top, except that there are no downturned flanges b^7 and its chambers b^8 are practically dead-air chambers. The door G is formed like the end walls, except that its sheet-metal lining B has its horizontal edges turned over to incase the horizontal edges of the asbestos cover A^2. The door is united to the oven at its lower edge by the hinges g, Fig. 3.

In constructing my oven the sheet-metal frames B and B' are first bent to the form shown, after which the asbestos sheets A are slipped into their seats and secured to the sheet-metal frames by rivets b^8. The bottom F, which is of sheet metal, has its front end and back edges turned up at a right angle to the bottom. The vertical end and back frames, so formed, are set on the bottom, their outer walls bearing against the upturned flanges, to which they are secured. The top is then put in position, with the flanges b^7 entering the air-chambers and bearing against their inner walls. The angle finishing-strips b^9 are then placed over the corners and secured in position, after which the lower shelf C is placed in position with the swinging valve fixed upon it, the door hinged to the front upturned end of the bottom, and the oven completed.

It is obvious that the form of the metal casing may be varied, and the vertical joints b^4 may be made in a curved or ogee form instead of angular rabbets, as shown, and that different forms of registers or valves may be substituted in the structure for those illustrated in the drawings without departing from the principle or scope of the invention.

What I claim is—

1. In an oven for vapor or gas stoves, the combination of the sheet-metal frames forming the end and back walls, having their vertical edges bent around to form grooves to hold the asbestos sheets forming the outer covering, the inner walls bent to bear against the inside of the covering and form between said bends air-chambers, the asbestos sheets held in said frames and secured thereto by rivets, the top of the oven having frames similarly formed and the end walls of its air-chambers turned down to bear against the wall of the air-chamber in the end pieces, and angle-strips overlapping the corners for securing the walls together, substantially as shown and described.

2. The combination of the outer non-conducting walls formed of asbestos or similar material, the sheet-metal frames incasing and holding said asbestos sheets and forming air-chambers between said sheets and the oven proper, the vertical end and back walls of the air-chambers being perforated and having inturned lugs to support the lower shelf of the oven, the ends of the top air-chamber being turned down to bear against the walls of the vertical air-chamber in the oven ends, the shelf resting upon said lower lugs and centrally perforated, and the swinging valve to open or close said perforation for the purpose of admitting the heat from the burner to the oven, or excluding it therefrom, substantially as shown and described.

3. The combination of the oven, communicating air-chambers surrounding the end and top walls, the top wall of one of the air-chambers and the top cover being perforated, connected valves controlling said openings or perforations for the purpose of conducting the heated vapors into the oven or from the oven to the open air, substantially as shown and described.

LUDWIG LENTZ.

Witnesses:
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EMMA LYFORD.