L. C. SMITH.

HEATING AND VENTILATING SYSTEM.

APPLICATION FILED DEC. 4, 1911.

1,067,201.

Patented July 8, 1913

Fig. 2

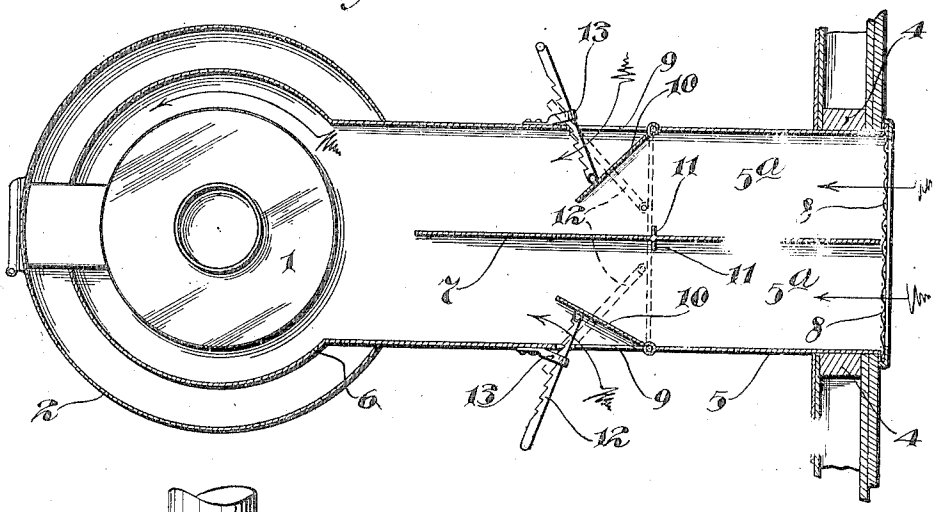
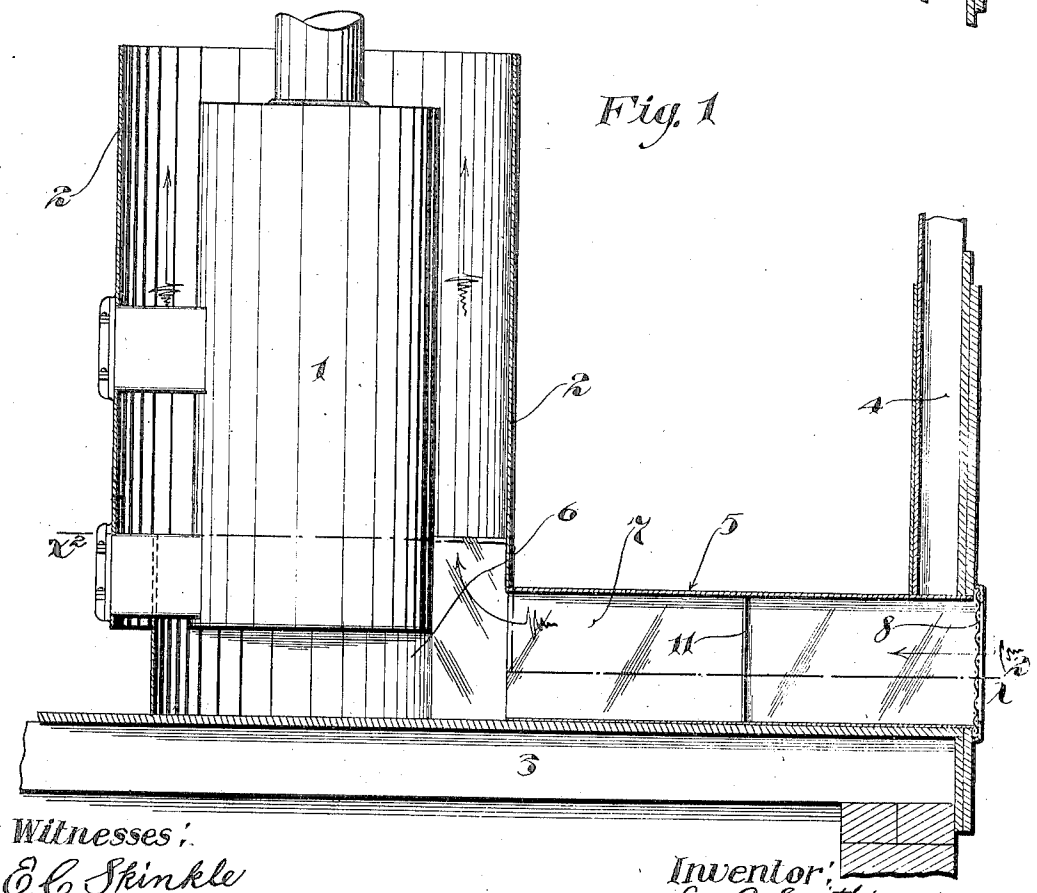


Fig. 1



Witnesses:

E. C. Skinkle

Geo. Knutson

Inventor:

Leo. C. Smith

By his Attorneys:

Williamson & Merchant

UNITED STATES PATENT OFFICE.

LEO C. SMITH, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO SMITH SYSTEM HEATING COMPANY, OF MINNEAPOLIS, MINNESOTA, A CORPORATION OF MINNESOTA.

HEATING AND VENTILATING SYSTEM.

1,067,201. Specification of Letters Patent. Patented July 8, 1913.

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To all whom it may concern:

Be it known that I, LEO C. SMITH, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Heating and Ventilating Systems; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to heating and ventilating systems of that type wherein the heater is surrounded by an open-ended jacket so that the air of the room is circulated through the annular space between the heater and jacket. The invention has for its particular object, and provides improved means for admitting fresh or outside air into the annular air heating space between the heater and jacket of the heating system of the type stated.

Generally stated, the invention consists of the novel devices and arrangement of parts hereinafter described and defined in the claims.

In the accompanying drawings which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view chiefly in vertical section, but with some parts in full elevation illustrating my invention incorporated in a heating system of the type stated; and Fig. 2 is a view principally in horizontal section taken on the irregular line x^2 x^2 on Fig. 1, the heater being shown in full and one of the intermediate segmental walls being shown completely sectioned.

The heater is indicated as an entirety by the numeral 1 and its surrounding jacket is indicated by the numeral 2, both of these parts being of the usual or any suitable construction.

The numeral 3 indicates the floor, and the numeral 4 one of the walls of the building in which the heater is installed.

The numeral 5 indicates a fresh air intake pipe that extends through the wall 4, to one side of the jacket 2, and within said jacket is provided a cylindrical wall 6 that extends upward within said jacket to a point considerably above the open lower end of said jacket. The said cylindrical wall 6 is of considerably greater diameter than the outer wall of the heater, but of considerably less diameter than the jacket 2, and is concentric to both thereof. Preferably, the air intake pipe 5 is rectangular in cross-section, and it is divided into two fresh air intake conduits 5^a, by a center portion 7. The outer end of the entire intake pipe 5 is preferably covered with wire gauze 8. In its opposite side walls, the pipe 5 is provided with large air intake ports 9 that are adapted to be open, more or less, or entirely closed by pivoted dampers 10. These dampers 10 are of such dimensions that when moved inward to dotted line positions shown in Fig. 2, they will engage with stop flanges 11 on the partition 7 and entirely close the respective fresh air intake conduits 5. When the said dampers 10 are in intermediate positions, they will partly close the fresh air intake conduits 5^a, and, consequently open the air inlet ports 9.

As a convenient means for setting the dampers 10, in their various different positions, small ratchet bars 12 are shown as pivotally connected thereto and arranged to be engaged with and guided by small brackets 13 secured to the sides of the pipe 5. With this arrangement of fresh air intake conduits and dampers described, it is evident that, when desired, the conduits 5^a may be used to their full capacity for drawing in fresh air; or when the said dampers are moved into their dotted line positions shown in Fig. 2, the inner portions of the conduits 5^a will be used to draw in only the air from the room and to deliver the same into the jacket 2; or when the said dampers are set in intermediate positions, any desired proportions of fresh air and air from the room may be drawn in through the said conduits 5^a. Also, the said dampers 10 are capable of independent adjustments, so that one conduit may be utilized, for instance, to draw in fresh air, and the other conduit to draw in only air from the room. In all adjustments of said valves, however, both conduits 5^a are utilized to their full capacity for the circulation of air, either fresh air or air from the room. The air drawn into the lower portion of the jacket 2 from the conduits 5^a will, in part, be carried entirely under the bottom of the heater 1, and from all points circumferentially thereof, will be drawn upward into the annular heating

chamber formed between the said heater and jacket. The extension of the wall 6 vertically above the bottom of the heater and above the open lower end of the jacket 2 gives the air a good chance to spread and distribute itself under the bottom of the heater before it commences its direct upward course through the annular heating chamber. This is highly important. This fresh air intake device does not, as is evident, form obstruction to the circulation of air through the heating jacket, but on the contrary, in all adjustments and different uses thereof, operates to its full capacity, and circulates air through the heating chamber formed between the heater and jacket.

As is evident, the above described arrangement directs the fresh air into contact with all sides as well as into contact with the bottom of the heater, and thus affords means for heating the maximum amount of fresh air for supply into the room. Also, the arrangement of the dampers 10 is such that the fresh air is deflected past the air ports 9 when the said dampers are in intermediate positions, and thus at all times causes the fresh air to pass into contact with the heater before entering the room.

What I claim is:

1. In a heating and ventilating system, the combination with a heater with its bottom set above the floor, of a surrounding jacket with its lower edge set above the floor, a wall extending from the floor upward in the space between said heater and jacket to a point above the bottom of said heater and jacket, and a fresh air conduit extending through said jacket and communicating with the space within said wall, all that portion of the fresh air conduit projecting into said jacket being open at the top.

2. In a heating and ventilating system, the combination with a heater with its bottom set above the floor, of a surrounding jacket with its lower edge set above the floor, a wall extending from the floor upward in the space between said heater and jacket to a point above the bottom of said heater and jacket, a fresh air conduit extending through said jacket and communicating with the space within said wall, a partition dividing the outer portion of said fresh air intake conduit, said conduit having lateral intake passages on opposite sides of said partition, and dampers for opening and closing said lateral intake passages.

3. In a heating and ventilating system, the combination with a heater with its bottom set above the floor, of an open ended jacket surrounding said heater, a wall extending from the floor upward in the space between said heater and jacket to a point above the bottom of said heater and above the lower end of said jacket, said wall being of greater diameter than said heater and less diameter than said jacket, a fresh air intake pipe extending through said jacket and communicating with the space within said wall, a partition dividing the outer portion of said fresh air intake pipe into two conduits, each conduit having a lateral intake opening for the circulation of air of the room, and dampers movable to close said lateral openings or the fresh air intake conduits, at will, and adapted to be set in intermediate positions, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

LEO C. SMITH.

Witnesses:
HARRY D. KILGORE,
F. D. MERCHANT.