

J. W. REDFERN.
VENTILATING WALL CONSTRUCTION.

APPLICATION FILED OCT. 6, 1903.

NO MODEL.

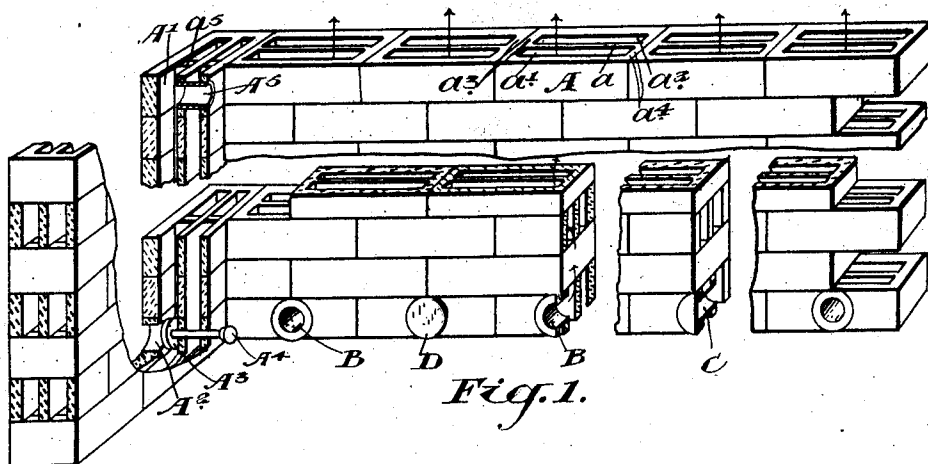


Fig. 1.

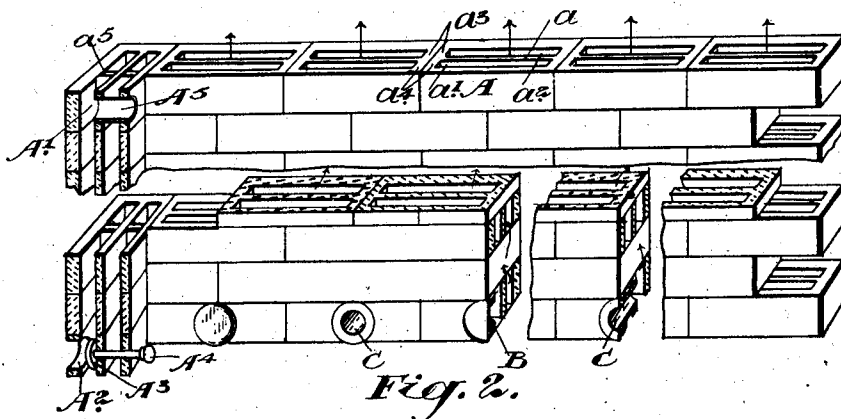


Fig. 2.

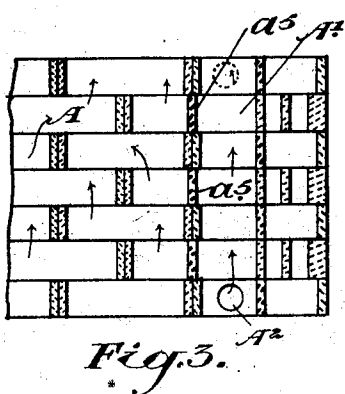


Fig. 3.

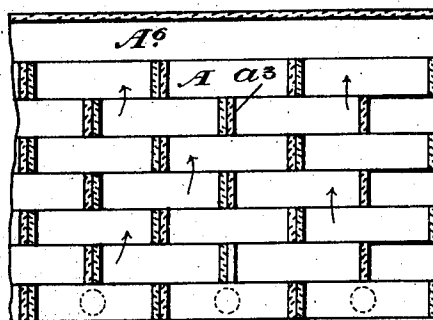


Fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

JOHN W. REDFERN, OF OWEN SOUND, CANADA.

VENTILATING-WALL CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 761,711, dated June 7, 1904.

Application filed October 6, 1903. Serial No. 176,009. (No model.)

To all whom it may concern:

Be it known that I, JOHN WESLEY REDFERN, hardware merchant, of the town of Owen Sound, in the county of Grey, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Ventilating-Wall Construction, of which the following is a specification.

My invention relates to improvements in ventilating-wall construction; and the object of the invention is to devise a form of hollow wall and arrangement of apertures and valves therein whereby the interior of a building, room, basement, or substructure may be kept at a suitable temperature and the air pure in winter and summer; and it consists, essentially, of a wall built of molded brick, stone, or cement, each block being formed vertically hollow with a central partition, whereby the wall is divided longitudinally into inside and outside intercommunicating spaces parallel with the faces of the wall, the bottom of each space having communicating passage-way or passage-ways with the interior of the room near the floor and a suitable exit at the top of the wall for each space and the wall being also provided with the outside apertures for the introduction of sufficient air at the bottom of the outside space and an inwardly-extending aperture at the top communicating with the aforesaid space and the interior of the room, the space in the wall into which these two apertures extend being divided by suitable partitions into a vertical flue, suitable valves being provided for the apertures and passage-ways and the parts being otherwise arranged and constructed in detail as hereinafter more particularly explained.

Figure 1 is a perspective view of a portion of a wall intermediately broken away as to its height, showing the construction and arrangement of a wall constructed in accordance with my invention and with the proper passage-ways shown open for winter ventilation. Fig. 2 is a similar view showing the proper passage-ways open for summer ventilation. Fig. 3 is a vertical section near the corner of the wall, showing the vertical flue for the admission of fresh air. Fig. 4 is a vertical section of the wall, showing the intercommunicating

spaces in the wall for the withdrawal of the foul air.

In the drawings like letters of reference indicate corresponding parts in each figure.

In my invention I may state that I preferably in the construction of the wall make the interior surface of the blocks of cement or other suitable material, rough on the inside similar to the rough coat which is laid on the laths previous to the putty coat being put on, and for this reason, it will be readily understood, with the surface of the interior of my wall the necessity for lathing and strapping the wall is entirely avoided.

A represents the blocks forming my wall, such blocks being arranged to break joint in the usual manner. Each block A is made with the central partition *a* dividing it into an inner and outer space *a'* and *a''*. The outside spaces *a''* are intercommunicating, forming one major space of intercommunicating spaces divided by the vertically-abutting end walls *a'''* of the block, and the inside spaces *a'* are intercommunicating, forming a major space of intercommunicating spaces divided by vertically-abutting end walls *a'''* of the block. Both of the aforesaid major spaces are parallel to the surface of the wall, but do not communicate with each other.

In Figs. 1 and 2 I show a series of conduits B and C, the conduits B and C being preferably alternately arranged and the conduits B extending through the inside of the block into the space *a'* of the major inside space and the conduit C extending through the block and inside space *a'* into the space *a''* of the major outside space.

Both of the conduits B and C are designed to be either closed by a register of any suitable form when desired or may be provided with a cap D, which may be alternately used to close either the conduit B or the conduit C, depending whether the ventilation is for winter or summer, as will hereinafter appear.

In order to form a fresh-air conduit, I divide each alternate block in the major outer space, preferably near the corner, by a partition *a⁵*, thereby forming a vertical flue A' in the outer space. At the bottom of this conduit and extending through the outside wall

of one of the blocks I provide an aperture A^3 , which may be wholly or partially opened or closed by means of the valve A^3 , the stem of which extends through the two inside partitions of the block to the inside of the room and is provided with a suitable handle A^4 . At the top of the flue A' , I provide a cross-conduit A^5 , which extends through the two inner walls, preferably into the upper portion of the room. It will thus be seen that a passage-way for the fresh air is provided through the aperture A^2 , flue A' , and conduit A^5 . The valve A^3 may be adjusted so as to vary the amount of fresh air which it is desired to let into the room. In winter necessarily the aperture would be partially closed and in the summer preferably left wide open.

In Fig. 1 I show a conduit B extending into the space a^2 , and this is for the purpose of winter ventilation, the conduit C in this instance being closed, thereby forming a dead-air space of the outer major space formed by the intercommunicating spaces a' , such space being equal in area to the outside of the wall of the building and necessarily serving to prevent the cold penetrating the wall. The inside major space in this instance will carry off the foul air from the bottom of the room, the heat in the room heating the air in the wall and inducing an upward draft through the wall to a conduit A^6 , by which the foul air will be conducted to a flue and carried away.

In Fig. 2 it will be noticed that I show the conduit C open and the conduit B closed. In this case it will be understood that the inside major space formed by the intercommunicating spaces a^2 of each block will be a dead-air space and prevent the admission of heat into the room and the outer space will be a broad conduit, corresponding with practically the area of the wall, by which the foul air will be carried to the top of the wall and out through a similar cross-conduit A^6 to a chimney or other suitable exit, the heat of the outside air in this case serving to heat the air in the major outside space and induce an upward current of the foul air from the bottom of the room. By such a construction of wall and arrangement of conduits, flues, and spaces I am enabled not only to draw the fresh air from the outside and cause it to circulate in the top of the room or building, but also to draw the foul air from the bottom of the room and draw it out through a suitable flue or conduit, thereby inducing circulation of fresh air continually from top to bottom of the room, thus keeping the air pure in the room and of the desired temperature.

By the construction of such a wall as I describe and my arrangement therein as to ventilation I am enabled to make the wall of my building impervious to cold, heat, or dampness, absolutely fireproof, perfectly sanitary and durable, and I am enabled to dispense with

all pipes for ventilation now so frequently used.

What I claim as my invention is—

1. In a ventilating-wall construction, a wall comprising blocks having vertical longitudinal inside and outside spaces formed by a central partition, the blocks being arranged to break joint, and supplemental partitions opposite the abutting ends of the block forming a vertical fresh-air flue in the outside major space, the wall having an aperture at the bottom communicating with the flue, and a conduit leading through the central partition and inner wall near the top into the interior of the room as and for the purpose specified.

2. In a ventilating-wall construction, a wall comprising blocks having vertical longitudinal inside and outside spaces formed by a central partition, the blocks being arranged to break joint, and supplemental partitions opposite the abutting ends of the blocks forming a vertical fresh-air flue in the outside major space, the wall having an aperture at the bottom communicating with the flue, a conduit leading through the central partition and inner wall near the top into the interior of the room, and a closing-valve for the bottom aperture provided with a suitable stem and handle extending through the inner partitions into the room as and for the purpose specified.

3. In a ventilating-wall construction, a wall comprising blocks having vertical longitudinal inside and outside spaces formed by a central partition, the blocks being arranged to break joint and forming major inside and outside spaces by the spaces in the blocks above each other intercommunicating, a conduit extending from the inside of the wall and through the lower portion thereof and through the inside space and central partition into the outside space as and for the purpose specified.

4. In a ventilating-wall construction, a wall comprising blocks having vertical longitudinal inside and outside spaces formed by a central partition, the blocks being arranged to break joint and forming major inside and outside spaces by the spaces in the blocks above each other intercommunicating, a conduit extending from the inside of the wall and through the lower portion thereof and through the inside space and central partition into the outside space, and a suitable closing-valve for such conduit as and for the purpose specified.

5. In a ventilating-wall construction, the combination with the blocks having inside and outside spaces, and the supplemental partitions forming a fresh-air flue, and the apertures in the bottom of the outside of the wall in the fresh-air flue and the conduit leading from the top of the fresh-air flue into the interior of the room, of the major space formed by the intercommunicating spaces of the blocks, and the conduits extending through the lower portion of the wall from the inside

into the inside space as and for the purpose specified.

6. In a ventilating-wall construction, the combination with the blocks having inside and outside spaces, and the supplemental partitions forming a fresh-air flue, and the apertures in the bottom of the outside of the wall in the fresh-air flue and the conduit leading from the top of the fresh-air flue into the interior of the room, of the major space formed by the intercommunicating spaces of the blocks, and the conduit extending through the lower portion of the wall from the inside into the outside space as and for the purpose specified.

7. In a ventilating-wall construction, a wall formed with separate inside and outside air-spaces parallel to the faces of the wall, an aperture or conduit leading from the inside in

proximity to the bottom of the wall to the inside space and a suitable flue at the top of the wall as and for the purpose specified.

8. In wall construction and ventilation, a wall formed with separate inside and outside spaces parallel to the faces of the wall, an aperture or conduit leading from the inside of the wall near the bottom through the inside space into the outside space, and a suitable flue at the top of the wall as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two witnesses.

J. W. REDFERN.

Witnesses:

R. J. C. DORSEY,
WM. BROWN.