June 3, 1924. 1,496,670

G. FLOYD

VENTILATION SYSTEM

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Fig. 1.

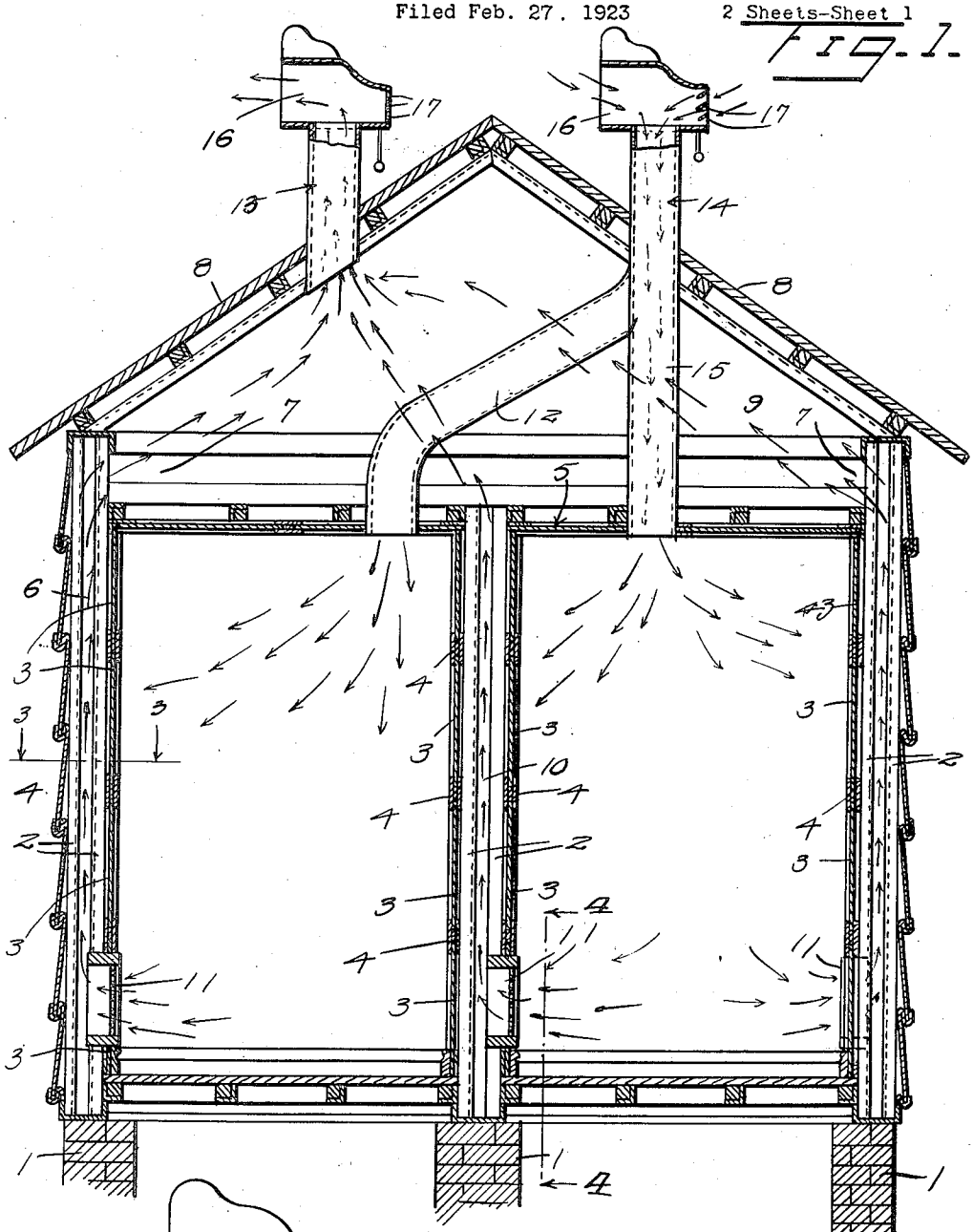

Fig. 5.

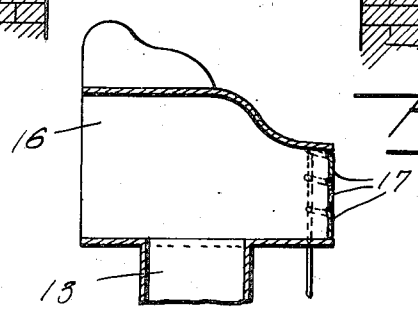

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Fig. 2.

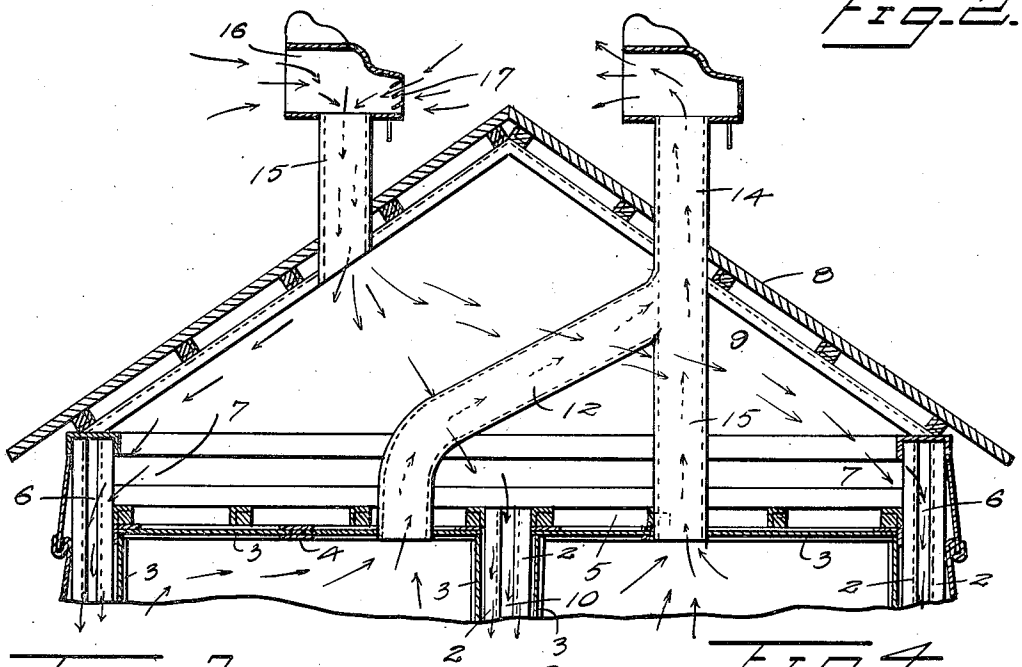


Fig. 3.

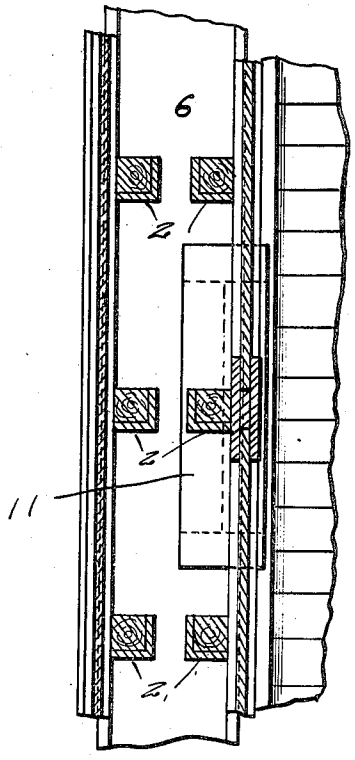
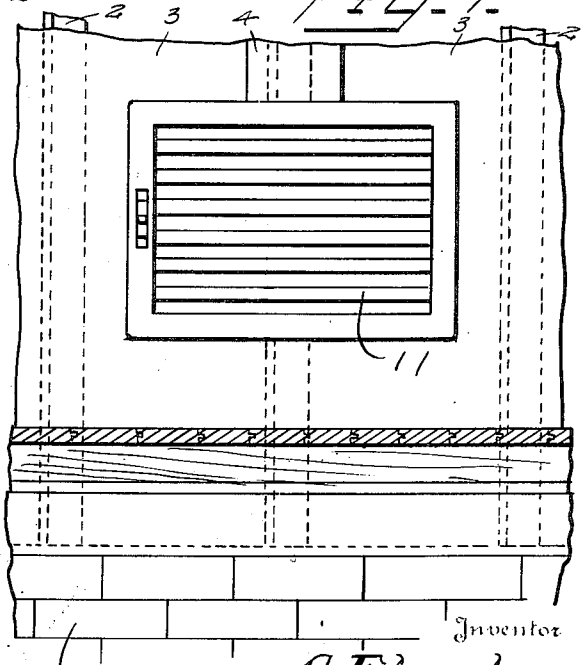


Fig. 4.



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Patented June 3, 1924. 1,496,670

UNITED STATES PATENT OFFICE.

GEORGE FLOYD, OF PORTSMOUTH, OHIO.

VENTILATION SYSTEM.

Application filed February 27, 1923. Serial No. 621,605.

To all whom it may concern:

Be it known that I, GEORGE FLOYD, a citizen of the United States, residing at Portsmouth, in the county of Scioto and State of Ohio, have invented certain new and useful Improvements in Ventilation 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.

The invention aims primarily to provide essentially an all-metal building which assures positive ventilation winter and summer, irrespective of the window and door openings, or whether the windows and doors are open or shut.

Other objects and advantages will be apparent and suggest themselves as the nature of the invention is understood.

While the drawings illustrate an embodiment of the invention it is to be understood that in adapting the same to meet different conditions and requirements, various changes in the form, proportion and minor details of construction may be resorted to without departing from the nature of the invention.

Referring to the accompanying drawings forming a part of the application,

Figure 1 is a vertical section of a building embodying the invention, showing the direction of the air current in warm weather by arrows,

Figure 2 is a view similar to Figure 1 showing the current of air in cold weather by arrows,

Figure 3 is a horizontal section on the line 3—3 of Figure 1,

Figure 4 is a vertical section on substantially the line 4—4 of Figure 1, and

Figure 5 is a sectional detail of one of the ventilators.

Corresponding and like parts are referred to in the following description and designated in the several views of the drawings by like reference characters.

The building is erected upon a foundation 1 of masonry, such as brick, and comprises a metal framing to which sheets of metal are attached, the enclosing walls, partitions, ceiling and floors being hollow, whereby to provide passages for the circulation of air, as indicated by the arrows in Figures 1 and 2. The building illustrated consists of a two-room bungalow surmounted by a gable roof, the walls and partition including metal studs 2, to which metal sheets 3 are attached, the joints between the sheets being closed by metal strips 4. The ceiling 5 is lower than a horizontal plane touching the upper edges of the outer or enclosing walls, so that the spaces 6 of the hollow walls open into the roof space above the ceiling as indicated at 7. The roof 8 is of gable construction and supported upon the enclosing walls. A space 9 is formed between the roof 8 and ceiling 5 and is in communication with the spaces 6 of the enclosing walls and the space 10 of the partition. Registers 11 are provided in the enclosing walls and partition adjacent the floor and provide for a circulation of air between the rooms and the spaces of the hollow walls and partition. Ventilators 13 and 14 are applied to the roof 8, the ventilator 13 opening into the roof space 9 and the ventilator 14 having communication with the rooms of the building by means of branch pipes 12 and 15. The ventilators 13 and 14 are of similar or like formation, each consisting of a pipe and a cowl 16 pivotally mounted upon the upper end of the pipe and including a vane for holding the cowl in the wind. The smaller end of the cowl is provided with a plurality of shutters 17 which may be opened or closed, as required.

In warm weather, the building is heated from without, thereby expanding and causing the air to flow upwardly in the spaces of the hollow walls and partitions, such air discharging into the roof space 9 and passing out through the ventilator 13, the shutters 17 of which are closed. The upflow of air in the hollow walls and partitions draws air from the rooms through the register 11 into the spaces of said walls and partitions, and the air withdrawn from the rooms is replaced by air drawn into the ventilator 14 and through the branch pipes 12 and 15 in communication therewith. The shutters of the cowl and the ventilator 14 are open to facilitate the entrance of air. In cold weather, the air currents are reversed, the heated air within the building rising and passing off through the pipes 12 and 15 and the ventilator 14. This results in drawing air into the registers 11 from the spaces of the hollow walls and partition and air is supplied to said spaces from the roof space 9 and the ventilator 13. In cold weather, the slats of the ventilator 13 are open and

the slats of the ventilator 14 are closed. The ventilation is materially assisted by the pivoted cowls which are held in the wind by means of the vane applied thereto.

What is claimed is:

A building comprising hollow walls and partitions and having the ceiling in a lower plane than the upper ends of the hollow walls and partitions, whereby the spaces of the walls and partitions open into the roof space above the ceiling, the walls and partitions having registers adjacent the floor whereby the spaces are in communication with the rooms of the building, a ventilator applied to the roof and opening into the roof space, and a second ventilator applied to the roof and having communication with the upper portion of the rooms to be ventilated, said ventilators having controllable means whereby in warm weather fresh air may be admitted to said rooms through said second ventilator and be removed therefrom by said hollow walls, hollow partitions and first ventilator, and in cold weather fresh air may be admitted to the rooms through said first ventilator, hollow walls, hollow partitions and register and be removed therefrom through said second ventilator.

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

GEORGE FLOYD.

Witnesses:
W. A. FINNEY,
MARY E. FINNEY.