

No. 644,226.

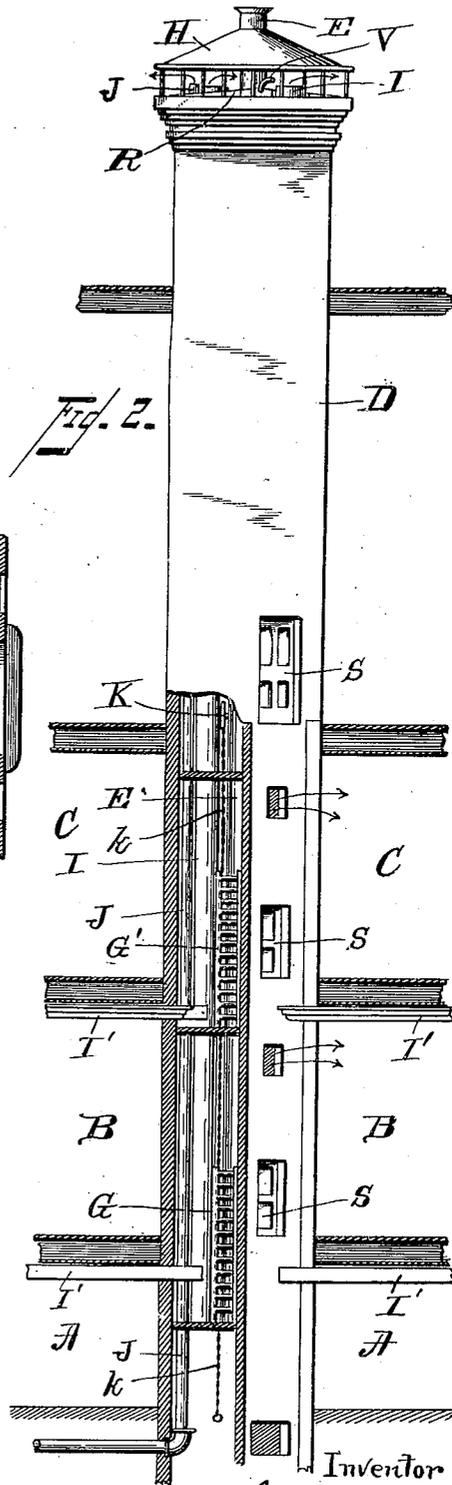
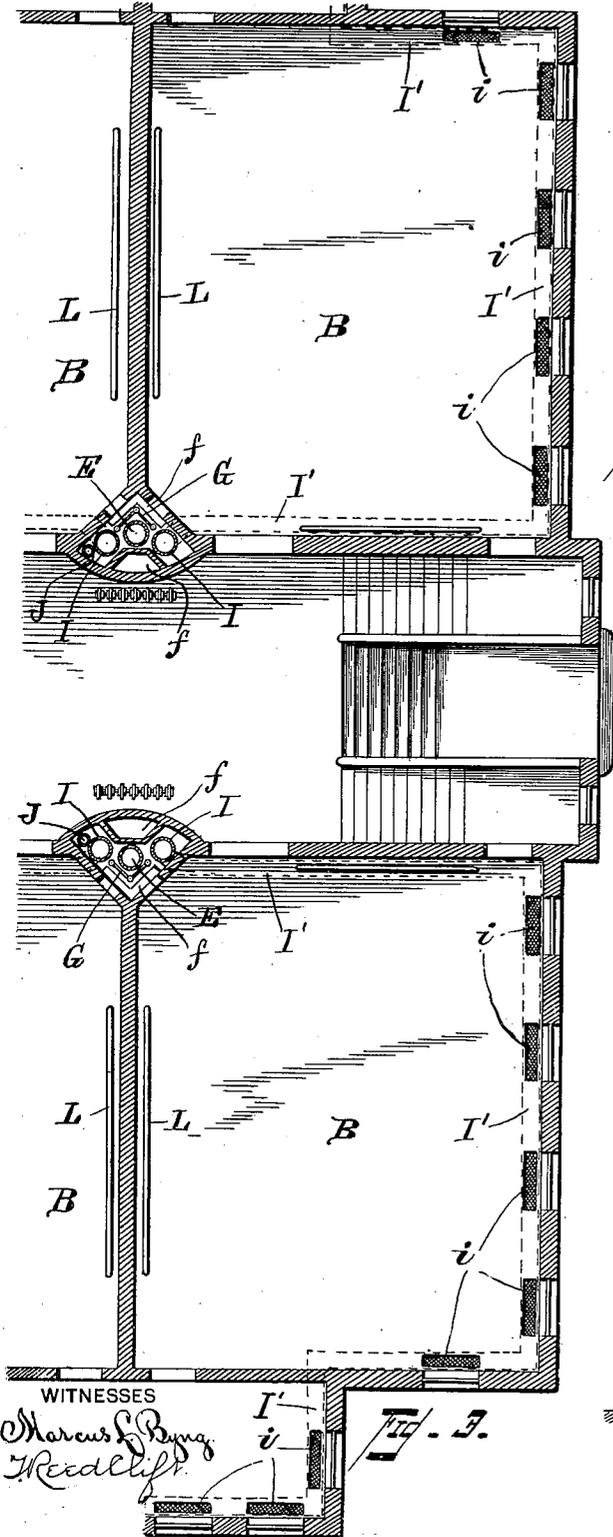
Patented Feb. 27, 1900.

C. FLUOR.
HEATING AND VENTILATING SYSTEM.

(Application filed May 31, 1899.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES
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UNITED STATES PATENT OFFICE.

CASPER FLUOR, OF OSHKOSH, WISCONSIN.

HEATING AND VENTILATING SYSTEM.

SPECIFICATION forming part of Letters Patent No. 644,226, dated February 27, 1900.

Application filed May 31, 1899. Serial No. 718,831. (No model.)

To all whom it may concern:

Be it known that I, CASPER FLUOR, a citizen of the United States, residing at Oshkosh, in the county of Winnebago and State of Wisconsin, have invented new and useful Improvements in Heating and Ventilating Systems, of which the following is a specification.

My invention relates to a combined heating and ventilating system for buildings; and it consists, essentially, of a large chimney having separate flues for smoke, heated air, and foul air, conductor-pipes connecting the flues with rooms of the house, and radiators within the chimney for indirect heating.

In the accompanying drawings, Figure 1 is a sectional view of a building. Fig. 2 is a detail of the chimney with a portion cut away, and Fig. 3 is a plan view of the floor.

Similar letters refer to similar parts in each view.

I have shown in the drawings an adaptation of my invention to a school-house, one-half of the building being shown. A represents the basement, B the first-floor rooms, and C the second floor. The arrows indicate the direction of the air-currents.

D represents the chimney, and E the smoke-stack within the chimney, which connects with the furnace in the basement. Cold fresh air from outside is admitted to the chimney at F and passing along and around the smoke-stack becomes heated. Where hot-air heating is used, the chimney may inclose the furnace. Where buildings are heated by steam or hot water, I provide radiators G G' inside of the chimney for the purpose of heating the air to provide indirect heating for the rooms. The air rises as it becomes heated and passes through a register or opening *b* to each first-floor room. A separate flue *f* is provided to carry the cold air to the second-floor rooms, and partitions *e e'* are interposed across the chimney at the top of the first and second floor rooms, respectively, to prevent the heated air from ascending above the room to which it is to be supplied. The cold air for the second floor passes through the flue *f*, becomes heated by the stack and the radiator G', ascends until it reaches the partition *e'*, and then passes through the register or opening into the room C. In the same manner other

floors above may be heated. The interior of the chimney is heated very hot by means of the stack E and the radiators G G', which causes a great draft to the chimney and also to the ventilating-flues I I and J, which are located within the chimney and extend from the basement to the top of the chimney. Conductor-pipes extend from the water-closets to the flue J, and the foul air from the closets is drawn into the heated flue J and carried out of the top of the chimney. Registers *iii*, &c., are provided in or near the floor of each room leading into the foul-air conduits I' I', which connect with the flues I I. The cold air near the floor of the room is constantly drawn through the conduits I' I' into the heated flues I I and carried out at the top of the chimney. It will be observed from Fig. 1 that the foul air is drawn from each room near the floor at the outer walls and at the same time the pure heated air is supplied through the registers in the inner walls near the ceiling. By this means I establish a constant circulation of air and thorough ventilation. The pure cold air is drawn from the outside of the building through the chimney, heated by the stack E and radiators G G', as hereinbefore described, and supplied to each room through the registers near the ceiling. This forms my system of heating by indirect radiation and at the same time provides a means of heating the ventilating-flues I I, so as to establish a draft sufficient to draw the cold air from each room at or near the floor to establish circulation of air and ventilation of each room. Radiators L L can also be established in each room to furnish heat by direct radiation.

An important purpose of my invention is to save heat that is usually wasted through the smoke-stack, and for this purpose I locate the damper in the smoke-stack at K above the ceiling of the top room and control it from below by means of the damper-chains *kk*. I also provide a partition P, Fig. 1, across the chimney to retain as far as possible the heat within the building.

The chimney is provided with a hood H and a cover R across the top to surround the flues I I and J. This cover is provided for the purpose of retaining the heat within the building and protect the interior of the chimney

from the action of the elements. A small vent V is provided to prevent explosion of the confined gases. At each floor I provide doors S S S, Fig. 2, so that a person may enter the chimney and replace or repair any of the parts.

Having thus described my invention, what I claim to have invented, and desire to secure by Letters Patent, is—

1. In a heating and ventilating system, the combination with a chimney, of heating-flues arranged therein and provided with openings near the upper parts of the rooms of a building for discharging hot air therein, horizontal foul-air ducts arranged beneath the floors of the rooms and having a series of registers or openings in the floors of the said rooms, the said openings being spaced apart and arranged upon the sides of the rooms which are farthest from the hot-air inlet, foul-air flues in the chimney adapted to receive the foul air from the said ducts, the system being such that the heated air will be drawn downwardly through the central portion of the room and more evenly distributed through the same because of the spaced arrangement of the series of registers leading into the foul-air ducts, the rooms being the more thoroughly heated and ventilated because of the

said distribution of the air, substantially as described.

2. In a heating and ventilating system, the combination with one or more large chimneys having vertical flues therein, the said flues opening into the tops of different rooms, means for thoroughly heating the said chimney or chimneys and the air passing through the same, horizontal ventilating-ducts leading into the said chimneys, the said ducts having a series of openings or registers spaced apart in the floors of the rooms and arranged near the windows of the rooms and upon the opposite sides of the said rooms from the hot-air flues, the structure being such that the heated air will be evenly distributed through the central portion of the rooms and the cold air entering the rooms through the windows will be carried into the various registers or openings leading to the ventilation-duct, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CASPER FLUOR.

Witnesses:

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