(No Model.)

F. A. PILLING.

VENTILATING BUILDINGS.

No. 292,444. Patented Jan. 22, 1884.

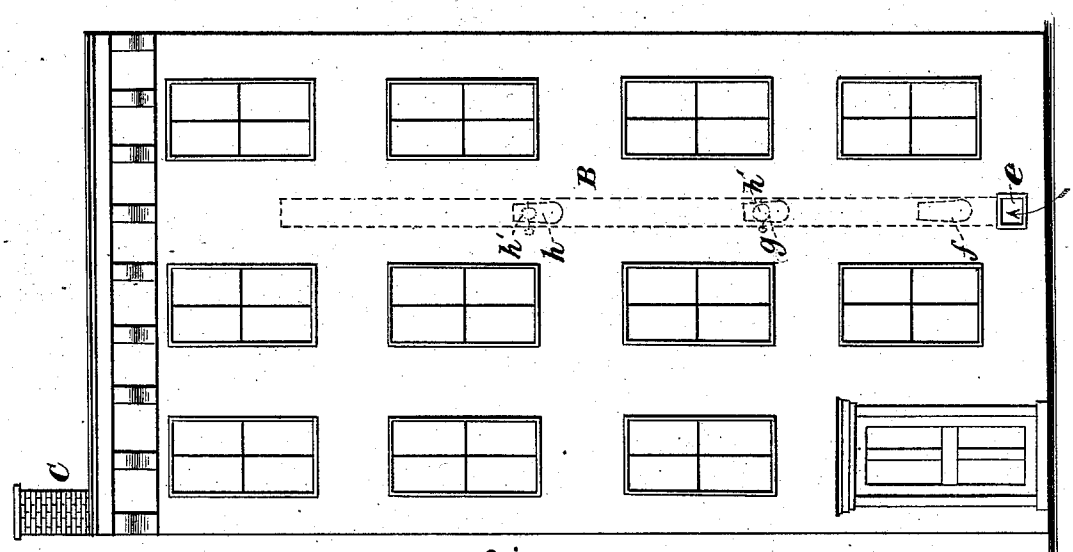


Fig. 2.

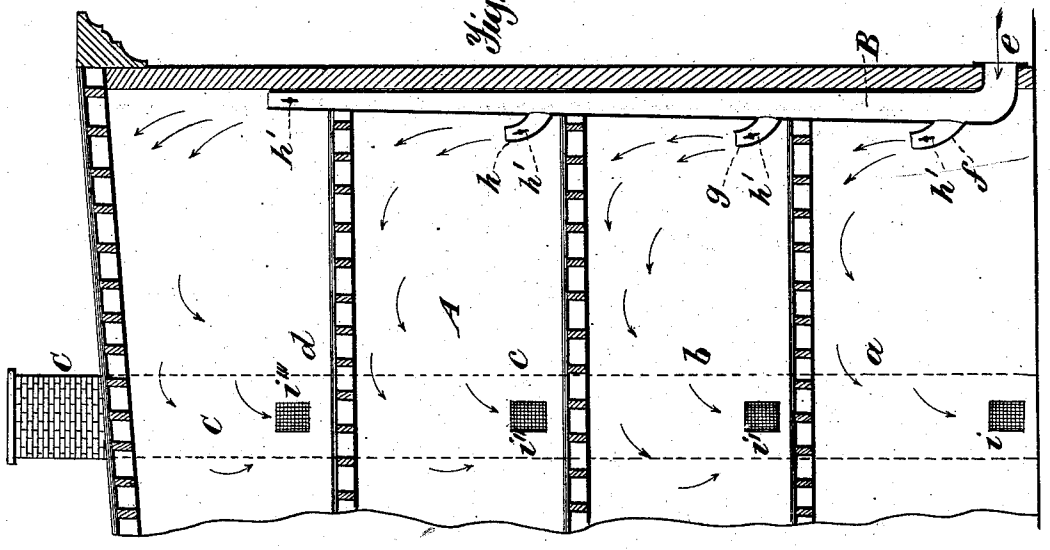


Fig. 1.

Witnesses:
A. Ruppert,
Victor Coombs

Inventor:
Franklin Albert Pilling,
by Geo. W. T. Howard
Atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

FRANKLIN ALBERT PILLING, OF COLESVILLE, MARYLAND.

VENTILATING BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 292,444, dated January 22, 1884.

Application filed July 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN ALBERT PILLING, of Colesville, Montgomery county, Maryland, have invented certain new and useful Improvements in Means for Ventilating Buildings, of which the following is a specification, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention is applicable to the ventilation of dwelling-houses, public buildings, churches, &c., and is particularly adapted for use in buildings of two or more stories in height.

In carrying out my invention, pure atmospheric air is admitted into an apartment in such a manner as to permit it to ascend to the ceiling, and then descend and press down upon the vitiated or impure air, and thus expel it from the apartment through an opening near the floor, preferably leading to an ordinary chimney or flue. The invention is so arranged as to discharge pure air from a common inlet pipe or duct a required distance above the floor of each apartment situated in the several stories of the building, the main inlet pipe or duct having an area in cross-section at its base equal to the combined area of the delivery-pipes, and proportionately decreasing in area as it ascends.

In the accompanying drawings, Figure 1 shows a vertical sectional elevation of a building of four stories, comprising my invention. Fig. 2 is a side elevation of a part of said building, also showing the application of the invention.

Similar letters of reference indicate similar parts in both figures.

A is a building of four stories in height, the stories being indicated by *a b c d*, respectively. The main inlet pipe or duct is shown by B, its lower end, *e*, opening into the outer air near the foundation of the building. The area of the pipe B in cross-section decreases as it rises. Three branch or air-delivery pipes are shown by *f*, *g*, and *h*, each connecting with the main pipe or duct B, and opening into the first, second, and third stories of the building. The pipe B, on entering the fourth or top story, need not necessarily be provided with a branch, but may deliver the air into the apartment in said story from the top end of the pipe. Each branch or delivery pipe is provided with a suitable damper or valve, *h'*. The upper ends of the delivery-pipe are preferably placed from two to five feet above the floors of the respective apartments.

C is an ordinary chimney or flue. Openings from the several apartments into said chimney or flue are shown by *i*, *i'*, *i''*, and *i'''*, said openings being situated near the floors of the several apartments. Said openings may be covered by suitable gratings, and, if desired, provided with registers. Ordinary open fire-places will serve the purpose of the said openings, and, if there is no chimney or flue in the room to be ventilated, a pipe must be used and connected with the nearest chimney.

The operation of the invention is as follows: The atmospheric air entering at *e* rises within the pipe B, and bodies of air are delivered from the branch pipes *f g*, &c., into the several apartments, the air, ascending from said branch pipes in unbroken columns and striking the ceilings, is diffused over the whole upper surface of the ceilings or top of the rooms. Being heavier than heated air, the pure air will descend, and, pressing on the heated, impure, and lighter air, will force it through the openings *i i*, &c. The amount of air admitted is regulated by the use of the dampers in the several branch pipes. The admission of air to any apartment may be entirely cut off by closing the damper of the branch pipe leading into said apartment. By having the bottom or base of the pipe B of greater cross-sectional area than the top, a sufficient volume of air will enter said pipe to permit the lower branch-pipes to be opened to their fullest extent without in any way diminishing or affecting the volume necessary for the branches of the floors above.

This invention will automatically and efficiently ventilate the different apartments of a building, and the ventilation of each apartment is placed readily within the control of any occupant of the room.

I claim as my invention—

1. The combination, with a building, of a main inlet pipe or duct opening into the outer air near the base of said building, decreasing in cross-sectional area toward the top, and provided with branch or delivery pipes open-

ing into the several apartments of the building, situated in its various stories, substantially as set forth.

2. The combination, with a building, of a main inlet pipe or duct opening to the outer air near the base of said building, decreasing in cross-sectional area toward the top, and provided with branch or delivery pipes and dampers for discharging and regulating the admission of air to the various apartments of said building, situated in its various stories, substantially as set forth.

3. A main inlet pipe or duct opening to the outer air near the base of a building, decreasing in cross-sectional area toward the top, and provided with branch or delivery pipes for discharging air into the several apartments situated in the several stories of the building, combined with a flue having openings located near the floors of the several apartments, substantially as set forth.

In testimony whereof I have hereunto set my hand this 9th day of July, A. D. 1883.

FRANKLIN ALBERT PILLING.

Witnesses:
W. T. COLE,
PHILIP MAURO.