M. J. MOREHOUSE.

VENTILATOR.

APPLICATION FILED AUG. 24, 1918.

1,309,867.

Patented July 15, 1919.

3 SHEETS—SHEET 1.

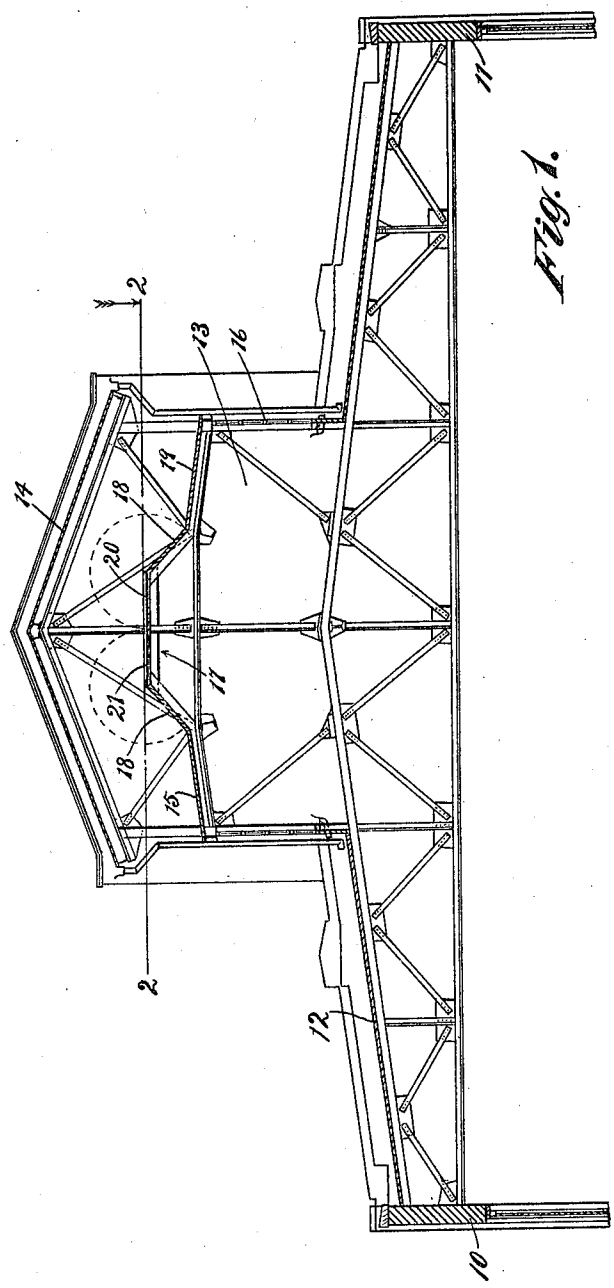



Fig. 1.

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THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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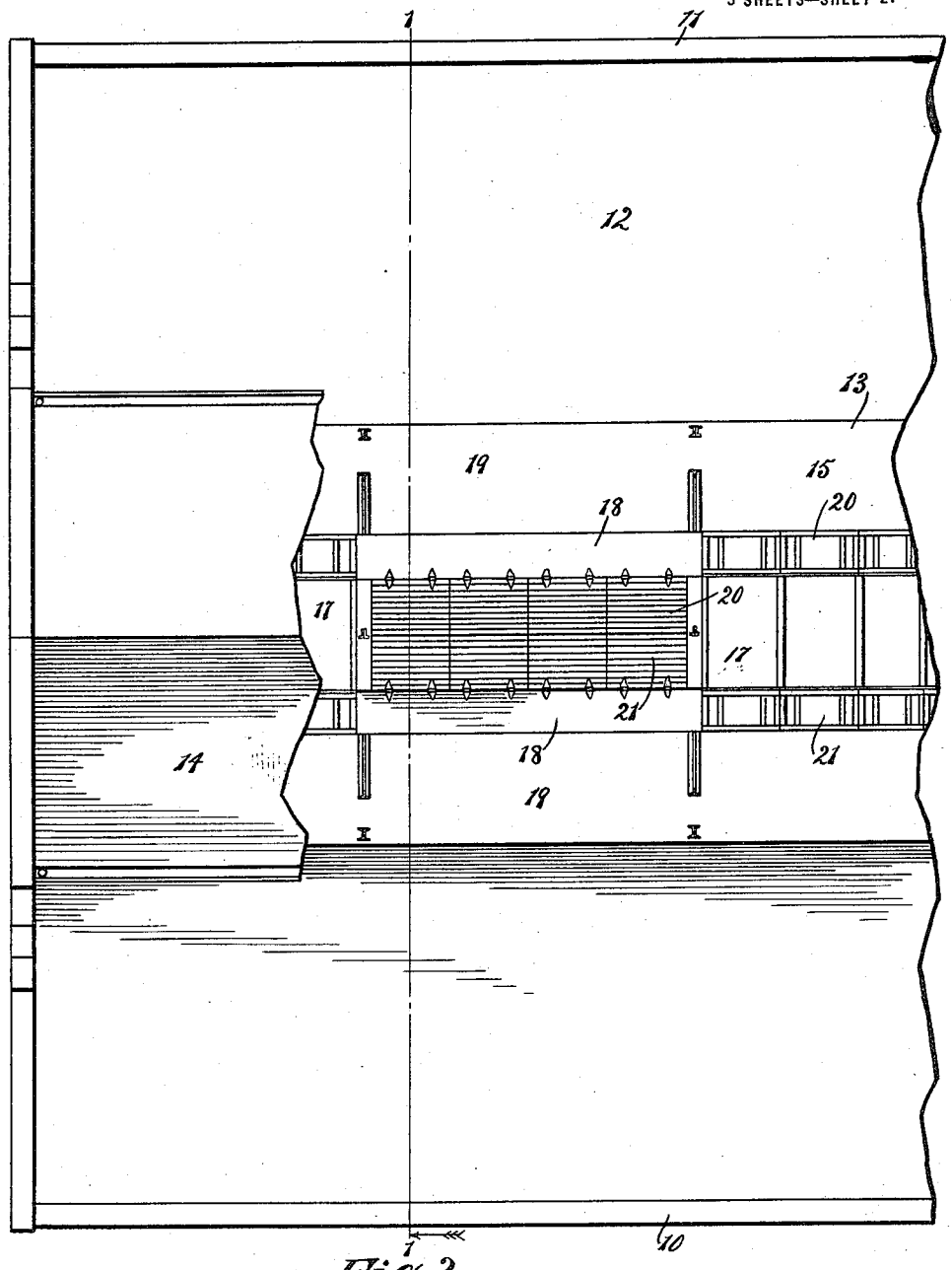



Fig. 2

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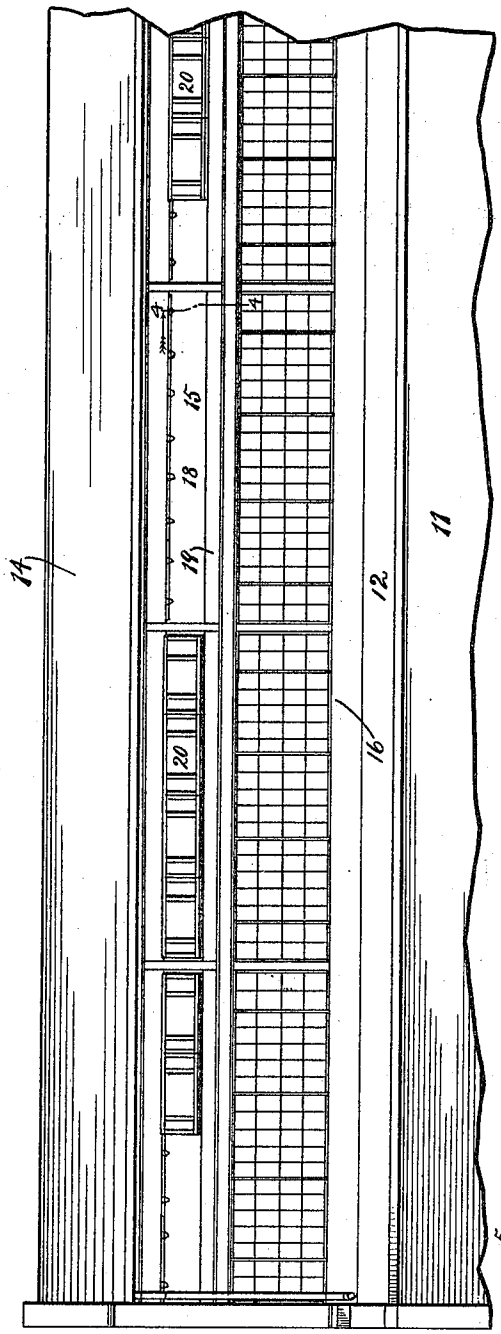



Fig. 3.

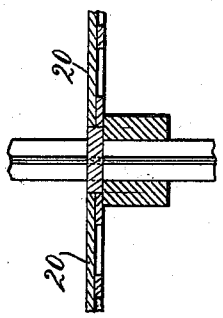



Fig. 5.

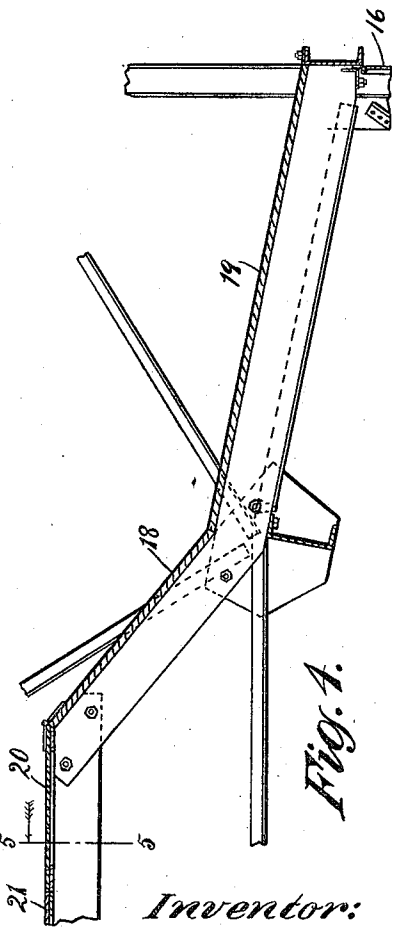



Fig. 4.

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# UNITED STATES PATENT OFFICE.

MERRITT J. MOREHOUSE, OF EVANSTON, ILLINOIS.

## VENTILATOR.

1,309,867. Specification of Letters Patent. Patented July 15, 1919.

Application filed August 24, 1918. Serial No. 251,315.

*To all whom it may concern:*

Be it known that I, MERRITT J. MOREHOUSE, a citizen of the United States, and resident of Evanston, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Ventilators, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to the ventilation of buildings, and is especially applicable to such structures as paper mills, foundries, etc., in which there is developed considerable quantities of vapor which require to be carried off. In paper mills there is an excessive development of water vapor which, unless rapidly discharged from the building, seriously interferes with the successful operation of the plant and causes the rapid deterioration of the building itself.

The object of this invention is to provide for the rapid discharge of vapors, the action being stimulated by the movement of outside air currents.

One embodiment of the invention is hereinafter described and is illustrated in the accompanying drawings, in which—

Figure 1 is a transverse vertical section through the upper portion of a building;

Fig. 2 is a detail plan view, partly in section, on the line 2—2 of Fig. 1;

Fig. 3 is a detail side elevation of the upper portion of the building;

Fig. 4 is a detail section on the line 4—4 of Fig. 3; and

Fig. 5 is a detail section on the line 5—5 of Fig. 4.

The side walls of the building are shown at 10, 11, and its roof at 12. Centrally superposed upon the roof 12 is a monitor, generally designated by the numeral 13, this structure, in the building illustrated, extending through its entire length. The monitor is provided with two roofs 14, 15, spaced apart a considerable distance. The side walls 16 of the monitor terminate at the lower roof 15, and are here shown as entirely of glazing and as without openings. The space between the two roofs is entirely open, except for the necessary framing, thereby providing for the free passage of air currents.

Both roofs slope toward the side walls. The lower roof 15 is provided with a longitudinal central opening 17 of substantial width. At each side of this opening for a short distance the roof has a decided pitch, as shown at 18, the outer portions 19 of the roof preferably being of less inclination. A pair of doors 20, 21, is provided for closing the opening 17. These doors are preferably hinged at the inner margins of the roof portions 18, and when closed meet at the center of the opening. When open the doors will fold backwardly and rest directly upon the roof sections 18. Usually the doors will be open, but are provided for use in extremely cold weather.

The wind may blow freely through the space between the two roofs, and, being deflected upwardly by the more sharply inclined portions 18 of the lower roof, will pass entirely over the opening 17 and will induce a draft through this opening which will rapidly carry out of the building the troublesome vapors incident to the operations being carried on therein. The velocity of the wind changes the action only in degree. A very gentle movement of the external air will produce the desired result, and the efficiency of the ventilating means is increased with the velocity of the wind. The upper roof not only protects the opening 17 from the weather, but coöperates with the lower roof in directing the air currents across this opening.

While there has been selected, for the purpose of illustrating the invention, a building of a certain type in which the ventilation is provided through the medium of a monitor, other types of buildings can be treated in similar manner, it being immaterial whether the double roof construction be limited to only a portion of the width of the roof or extend entirely across it.

Various changes of detail may be made without departing from the scope of the invention, the important consideration being that a portion of the roof leading to the opening be upwardly inclined.

Again, it is obvious that the upward deflection of the air currents is required only at any given time at the windward side of the opening. While the deflecting portions 18 of the roof are shown as stationary, and this form of construction is believed to be preferable, it is not essential.

I claim as my invention—

1. A ventilator for a building comprising, in combination, a pair of roofs spaced to permit free passage of air currents therebetween, the inner roof having an opening, and

means for deflecting such currents from their entering direction toward the outer roof across the opening in the inner roof.

2. In a ventilator, in combination, an apertured roof, a deflector upwardly inclined relative to the roof at the side of the roof aperture, and a second roof above the apertured roof, the sides of the structure being open to permit the free circulation of air between the roofs.

3. A ventilator comprising an inner and an outer roof arranged to permit the free passage of air therebetween, the inner roof being apertured, a deflector outwardly inclined relative to the inner roof surface flanking the aperture.

4. A ventilator comprising, in combination, a roof, a monitor surmounting the roof and having the lower portions of its side walls closed and the upper portions thereof open, a roof covering the monitor, and a sub-roof joining the walls thereof at the upper margins of their closed portions, such sub-roof being inclined upwardly from each side and having an opening at its median portion, the inner portion of each side of the sub-roof having a greater pitch than the outer portions thereof.

5. In a ventilator, in combination, a pitched roof having an aperture at its apex, and an upper roof spaced from the first-named roof and having its lateral margins in a plane above that of the aperture.

6. A ventilator for buildings comprising a pitched roof having an opening at its apex, and an upper roof spaced therefrom, the surface of the lower roof being free from obstructions to the passage of air thereover within the lateral confines of the upper roof.

7. A ventilator for buildings comprising an apertured roof, an upper roof spaced therefrom, the portions of the lower roof bordering the aperture being upwardly inclined and being free from obstructions to air currents within the lateral confines of the upper roof.

8. In a ventilator, in combination, a pitched roof having an aperture at its apex, the portions of the roof adjacent the aperture being inclined upwardly relatively to the general roof pitch, and an upper roof covering the aperture and spaced from the first-named roof and having its margins at a greater elevation than that of the margins of the aperture.

9. In a ventilator, in combination, a pitched roof having an aperture at its apex, the portions of the roof adjacent the aperture being inclined upwardly relatively to the general roof pitch, and an upper pitched roof covering the aperture and spaced from the first-named roof and having its margins at a greater elevation than that of the margins of the aperture.

MERRITT J. MOREHOUSE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."