

(No Model.)

2 Sheets—Sheet 1.

W. SCHMOLZ.

VENTILATOR.

No. 287,477.

Patented Oct. 30, 1883.

FIG. 1.

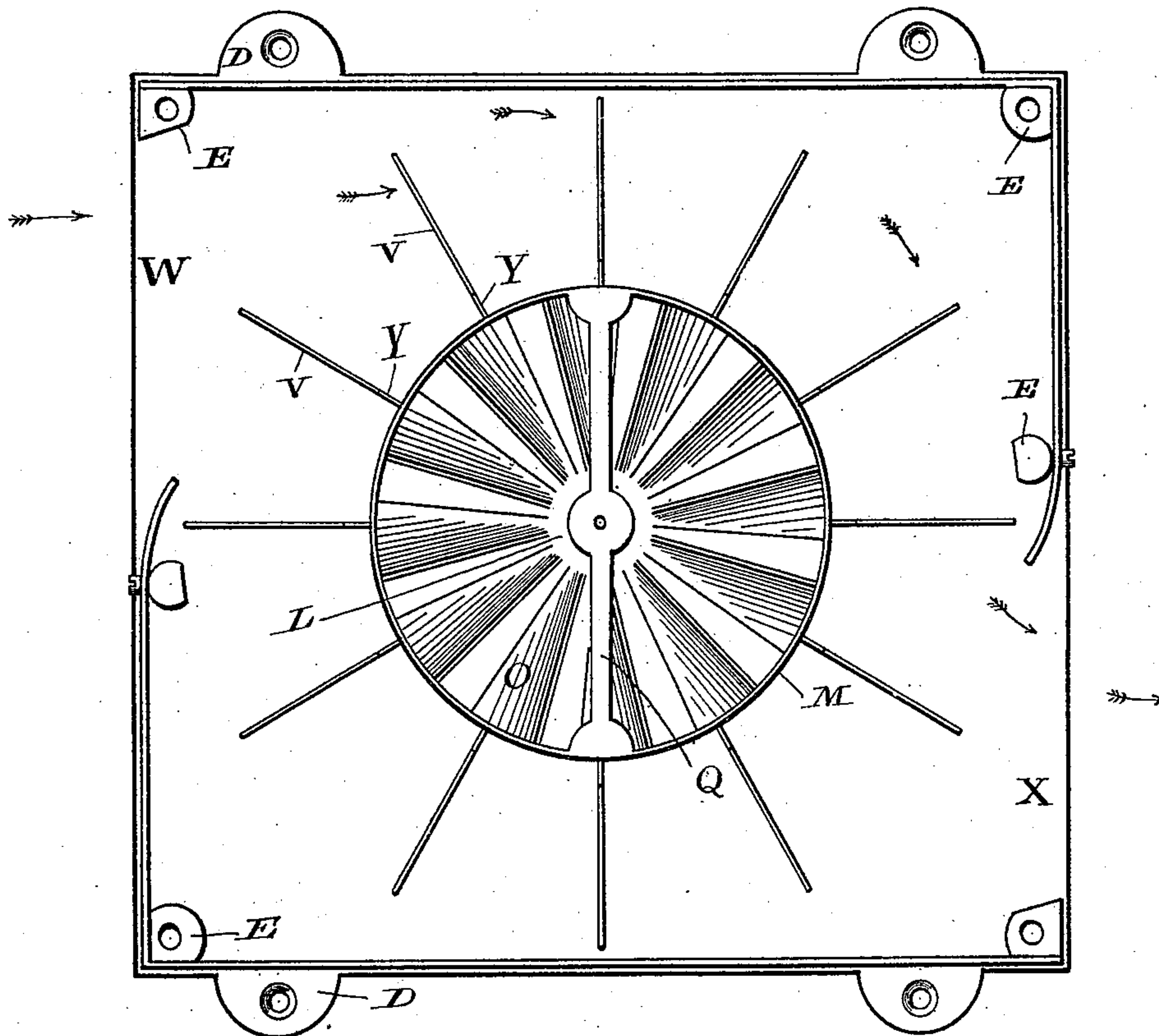
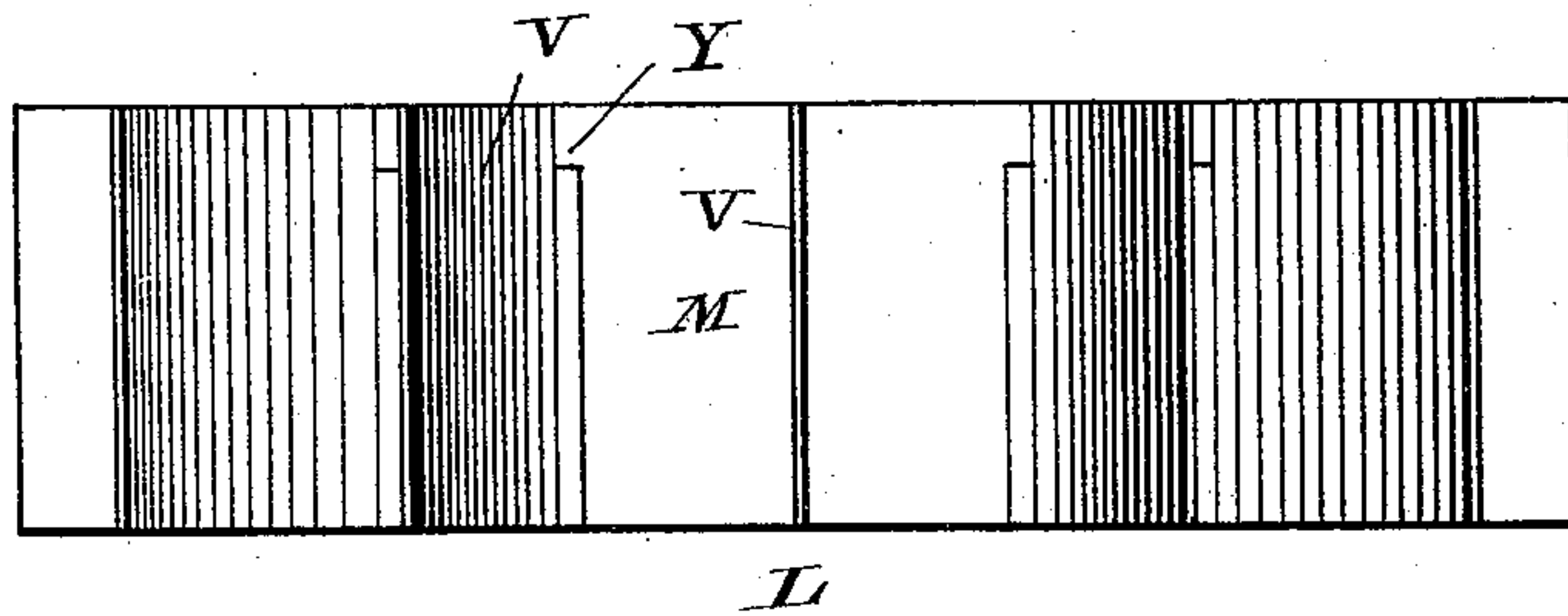


FIG. 2.



WITNESSES.

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INVENTOR.

William Schmolz
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FIG. 3.

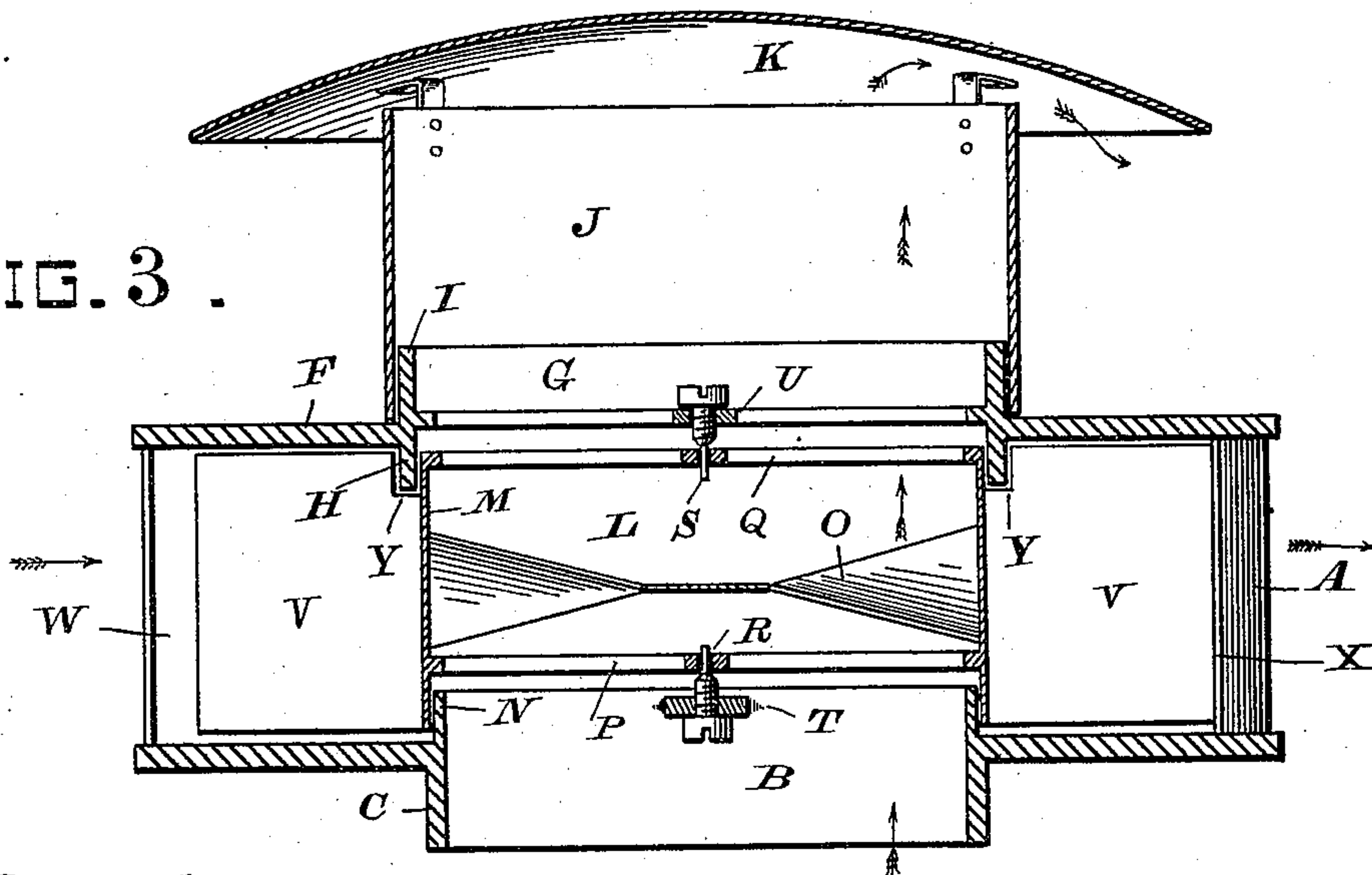
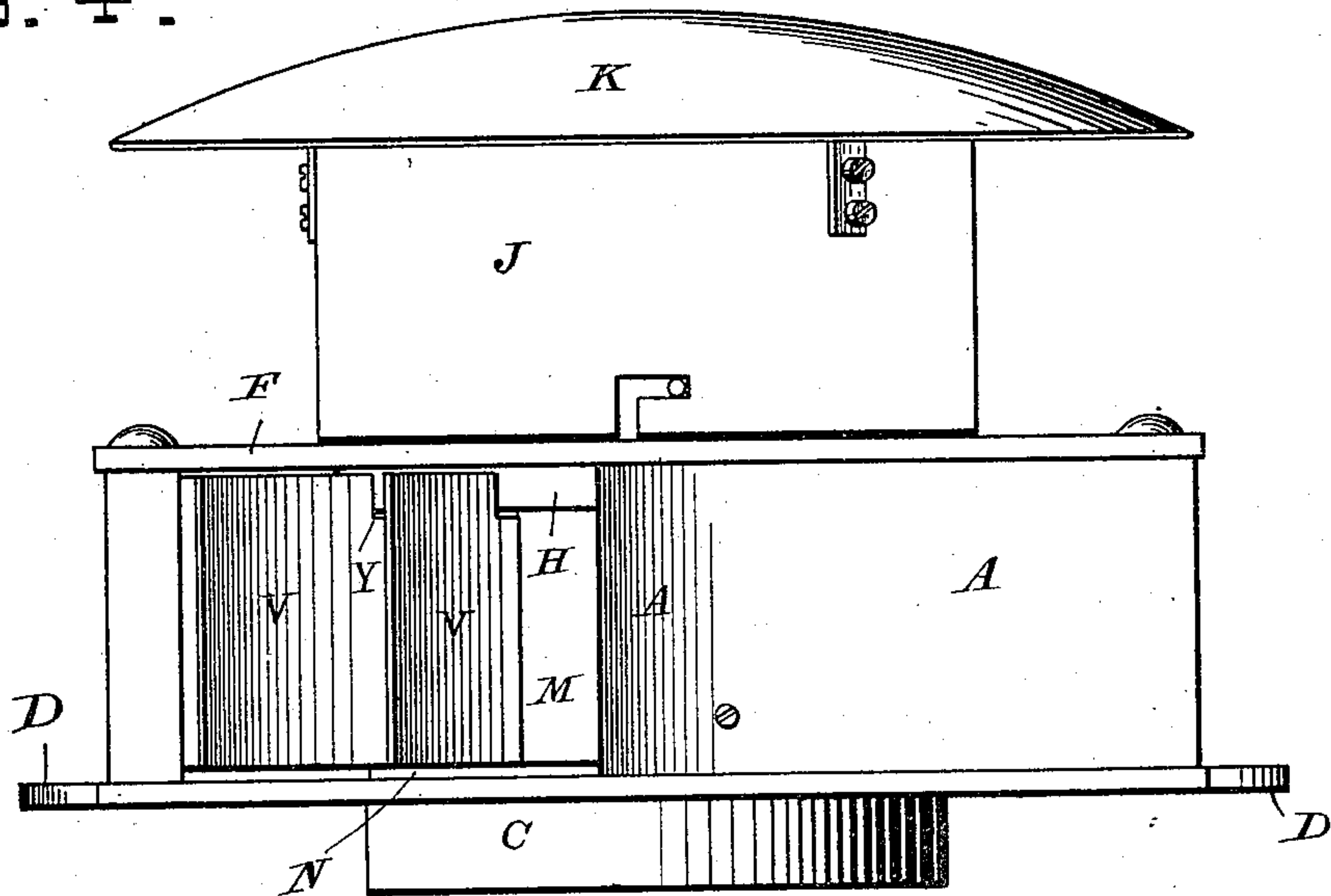


FIG. 4.



WITNESSES.

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UNITED STATES PATENT OFFICE.

WILLIAM SCHMOLZ, OF SAN FRANCISCO, CALIFORNIA.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 287,477, dated October 30, 1883.

Application filed May 28, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SCHMOLZ, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Ventilator, of which the following is a specification.

My invention relates to an improved automatically-operating device for ventilating railroad-cars and steam and sailing vessels, and is adapted for use in all places where a ventilator may be advantageously employed for the purpose of removing vitiated air from buildings, mines, or other places; and the object of my invention is to provide a ventilator adapted to withdraw the impure air from the interior of a compartment by the impact or action of the outside air against paddle-blades placed around the rim of the ventilating-wheel placed within a casing having suitable air-passages.

In the drawings which are hereto annexed, and which form a part of this specification, Figure 1 is a plan view of my improved ventilator, showing the top casing removed. Fig. 2 is an edge view of the ventilating-wheel. Fig. 3 is a longitudinal vertical section through the ventilator. Fig. 4 is an end elevation.

Similar letters of reference are used to indicate like parts throughout the several views.

This device is particularly adapted for use upon railroad-cars, and is intended to be placed within or upon the roof of the same at the point of highest elevation.

A represents the casing or wind-box, having a central circular orifice, B, and a downwardly-projecting flange, C, which is received within an aperture cut in the roof of the car, to which the air-box is secured by screws passing through side lugs or flanges, D.

Upon the bed-plate of the wind-box or casing A, I erect a suitable number of posts or pillars, E, which serve to support and brace the side walls of the casing. The lid or cover F of this casing is attached to the body of the case by screws, which enter the top of the posts E, thus permitting of the ready removal of the upper portion of the ventilator when necessary. A circular opening, G, is formed in the top plate, F, which has a downwardly-projecting flange, H, and an upwardly-projecting flange, I, forming a support, to which a short cylindrical tube

or chimney is attached by bayonet-joints, as shown in Fig. 4. The top of this chimney J is provided with a curved raised roof or cover, K, which excludes rain, dust, and ashes, yet at the same time permits of the outward passage of the impure air.

The ventilator-wheel L is provided with a broad rim, M, which closely surrounds or overlaps the upwardly-projecting flange N, cast upon the bottom of the casing A, while the upper part of the rim is received within the lower flange, H, of the cover or lid F, as seen in Fig. 3. The vanes or blades O of the ventilator-wheel may be of any desired form; but I prefer to employ the form shown in my application for Letters Patent for an improved fan-wheel, which was allowed to me on the 8th day of March, 1883.

Bars P and Q are extended across the top and bottom of the fan-wheel rim, and form journal-bearings to receive the pintles R and S, secured in corresponding cross-bars, T and U, which extend across the apertures B and G, formed, respectively, in the lower and upper plates of the casing.

Radial paddle-blades V are attached to the rim of the fan-wheel, and extend outwardly sufficiently far to barely clear the side walls of the casing; and it should be here remarked the air-passages W and X are formed in either end of the casing and in diagonal corners from each other. These air-passages are formed by cutting away a portion of the side walls of the casing, and that end of the wall nearest the opening is slightly curved inward and closely approaches the line of travel of the outer end of the paddle-blades, and by this means back-pressure of the air against the blades is avoided.

A shallow mortise or rabbet, Y, is cut in the top of the inner ends of the paddle-blades, and receives the downwardly-projecting flange on the top plate, F, and the blades fill the air-space of the casing from top to bottom, but leaving sufficient space for the free revolution of the wheel.

In practice the ventilator is placed upon the car-roof in such a manner that the air-openings in the casing will face the direction in which the train is proceeding, when the impact of the air upon the paddle-blades will produce a revolution of the wheel in the direction shown by the

arrows in Fig. 1, the air which enters through the front opening passing out through the rear opening, and as the communication between the interior of the car and the outer air is practically closed by the rim of the fan-wheel and the interiorly-projecting flanges hereinbefore described, it will be readily seen that the heated and impure air from the body of the car will be drawn and sucked by the rotary action of the fan-wheel through the central apertures, B and G, and allowed to escape through the chimney into the outer air.

By this construction it will be seen that the ventilator is not only acted upon by the ascending currents of heated air, but is capable of being driven at a high rate of speed by the impact of the air against the paddle-blades when the car is moving with speed, and thereby cause a more active and thorough ventilation.

Having thus described my invention, what I

claim, and desire to secure by Letters Patent, is—

In combination with a ventilator-casing, A, having inlet and outlet air-passages W and X, and circular interiorly-projecting flanges H and N, and openings B and G, of the ventilator-wheel L, suitably pivoted between the upper and lower plates of the casing, and having a rim, M, operating between the said upper and lower flanges, and carrying the interior fan-blades, O, and exterior paddle-blades, V, constructed, arranged, and operating substantially as shown, and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal.

WILLIAM SCHMOLZ. [L. S.]

Witnesses:

WILMER BRADFORD,
CHAS. E. KELLY.