(No Model.) 2 Sheets—Sheet 1.

C. W. LOCHMAN.

VENTILATOR.

No. 490,027. Patented Jan. 17, 1893.

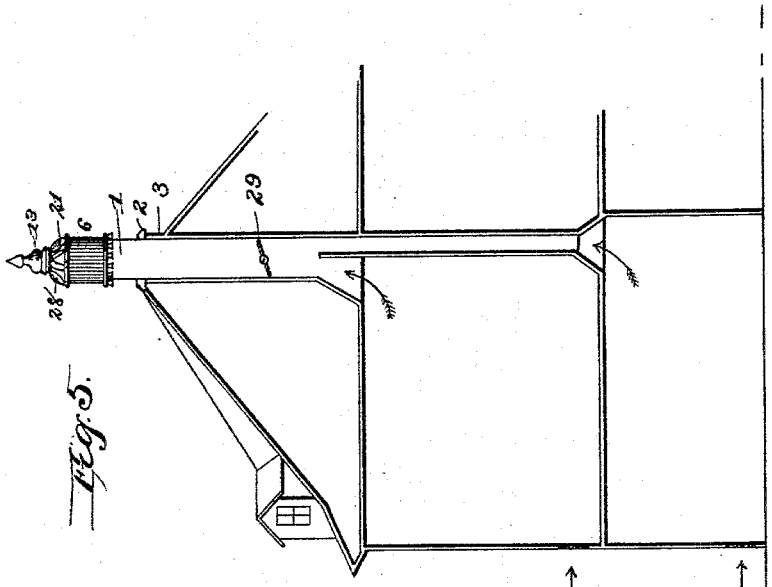

Fig. 5.

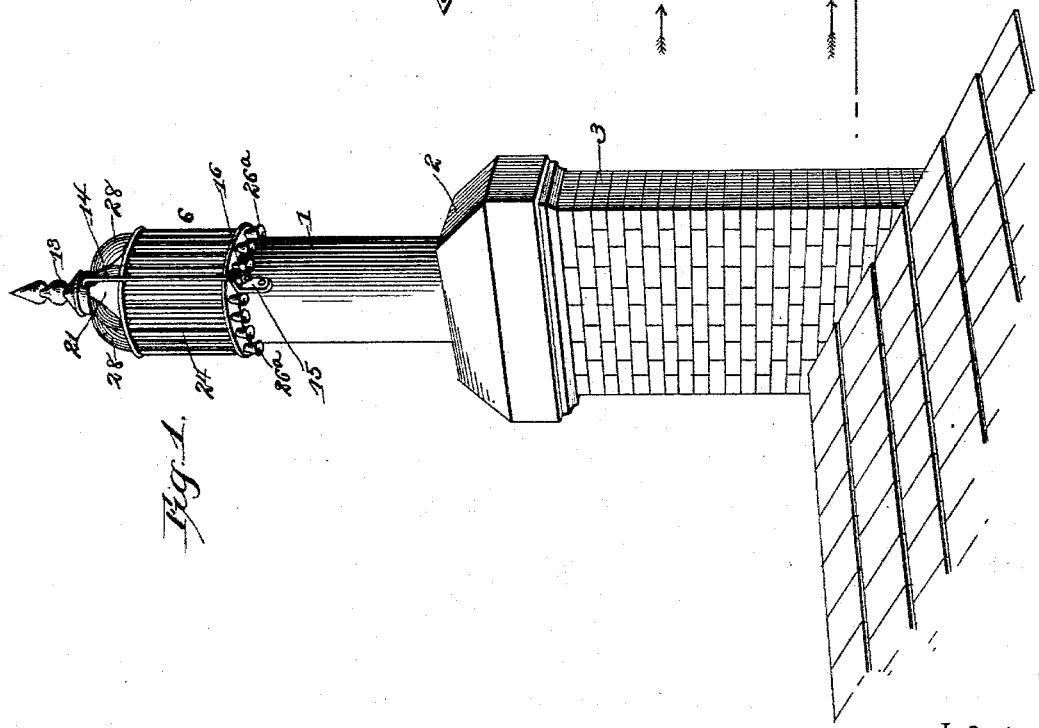

Fig. 1.

Witnesses

E. C. Hurdman

N. C. Riley

Inventor

Charles W. Lochman

By his Attorneys,

C. A. Snow & Co.

(No Model.) 2 Sheets—Sheet 2.

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VENTILATOR.

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Fig. 2.

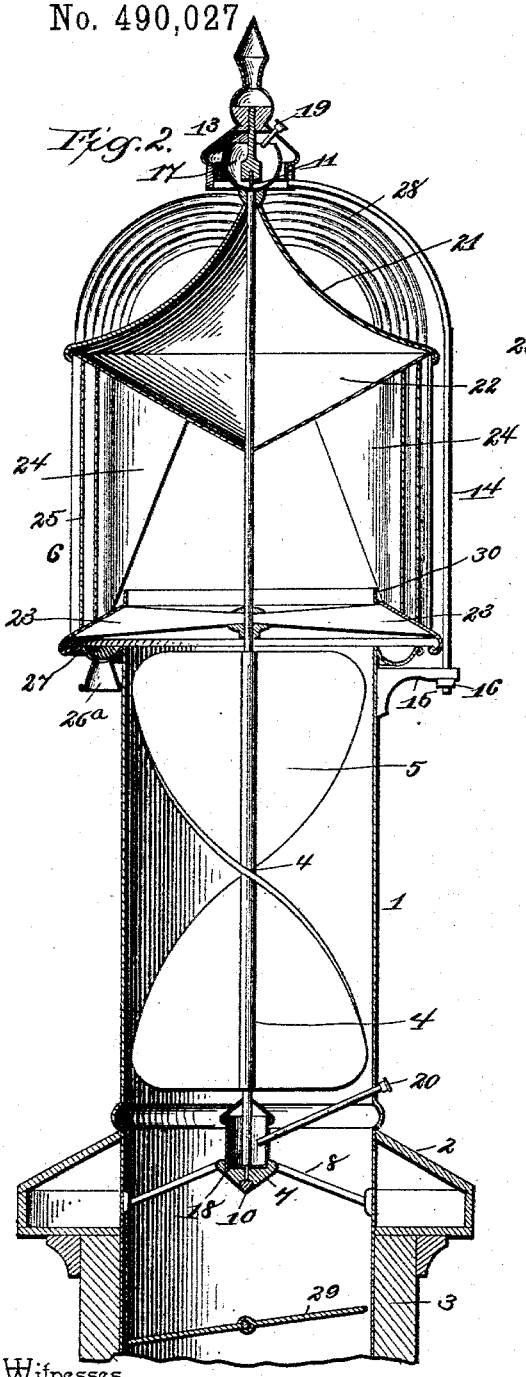


Fig. 3.

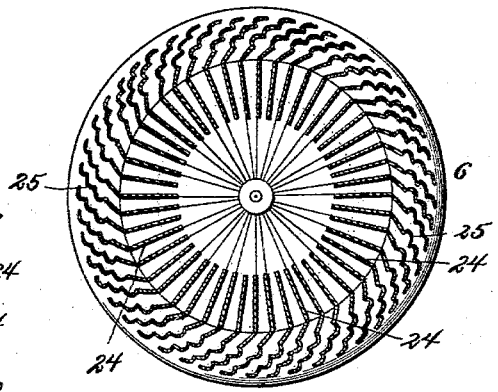
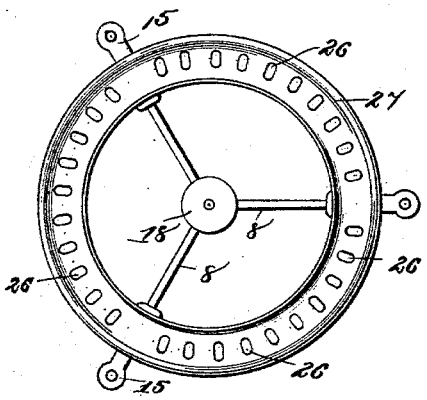


Fig. 4.



Witnesses

E. C. Lindeman

N. J. Riley

Inventor

Charles W. Lochman

By his Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

CHARLES WILLIAM LOCHMAN, OF CRESCENT CITY, CALIFORNIA.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 490,027, dated January 17, 1893.

Application filed July 26, 1892. Serial No. 441,302. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WILLIAM LOCHMAN, a citizen of the United States, residing at Crescent City, in the county of Del Norte and State of California, have invented a new and useful Ventilator, of which the following is a specification.

The invention relates to improvements in ventilators.

The object of the present invention is to provide for buildings a simple and comparatively inexpensive ventilator, capable of drawing impure air from rooms and of thereby causing a circulation of air throughout a building and consequent ventilation.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims hereto appended.

In the drawings—Figure 1 is a perspective view of a portion of a roof and chimney, and a ventilator constructed in accordance with this invention. Fig. 2 is a central vertical sectional view. Fig. 3 is a horizontal sectional view on line *x*, *x* of Fig. 2. Fig. 4 is a similar view on line *y*, *y* of Fig. 2. Fig. 5 is a sectional view of a portion of a building illustrating the manner of ventilating the rooms thereof.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a vertically disposed cylinder having a rectangular portion 2, and adapted to be secured to the top of a chimney 3 or other suitable shaft of a building and having journaled in suitable bearings within it a vertical shaft 4 carrying a screw 5 and a rotating drum 6 arranged above and rotating on the upper end of the cylinder 1. The screw 5 is vertically disposed, and is constructed similarly to an Archimedean screw and is adapted to draw up the chimney, smoke, steam, vapors and the like from work rooms and the impure air of rooms of residences. The lower end of the shaft is journaled in a central bearing 7, which is supported by rods 8 extending from the sides of the cylinder and being slightly inclined downward from the bearing to the sides of the cylinder. In order to enable the shaft 4 to rotate without friction, the bearing is provided with a small stone or pebble 10, upon which the lower end of the shaft bears. The upper end of the shaft is provided with a reduced portion or neck 11 which is journaled in a depending stem 12 of a top piece 13 supported by tripod legs 14 which have their lower ends secured to brackets 15 arranged at the upper end of the cylinder. The upper portions of the tripod legs are curved and are arched over the top of the drum which is approximately conical; and the ends of the tripod legs 14 are threaded and are secured in threaded openings of the top piece 13, and in perforations of the brackets 15 by nuts 16. The bearings of the shaft are supplied with oil from cups 17 and 18, which are filled by means of inclined tubes 19 and 20 extending from the oil cups to the outside of the ventilator and provided with threaded caps.

The rotating drum 6 is provided below its substantially conical top 21, the sides of which are concavo-convex, with an inverted cone 22, and has secured to the latter and to horizontal interior propelling blades 23, vertical blades 24 which extend radially from the vertical shaft and have their outer portions 25 arranged at an angle and provided with vertical egg-shaped curved corrugations, which form exit spaces for the escape of gases, vapors, smoke, and other impure air arising from the building and serve to extinguish sparks. The horizontally disposed propelling blades 23 are secured at their inner ends to the shaft, and the gases passing between them cause a rotation of the drum, and concavely depressed elongated openings 26 having straight sides and curved ends are provided in a cornice 27 of the cylinder to facilitate the rotation of the drum by allowing air to rush in at the base of the drum to take the place of the vapors, gases, smoke and the like passing out of the drum to the spaces between the vertical blades. Depending from the elongated openings 26 are flaring air supply tubes 26ª.

When there is no breeze the impure air, gases, and the like passing up the chimney will by means of the interior horizontally disposed propelling will cause a rotation of the drum, but when there is wind the rotation is accelerated by means of inclined blades 28 exteriorly disposed on the top 21 of the drum.

The concave faces of the exteriorly disposed propelling blades are all arranged on the same side, and cause the drum to rotate in one direction. These inclined blades have curved side edges, the lower ones of which conform to the configuration of the top of the drum to which top they are secured. The upper portions of the blades 28 are provided with longitudinal corrugations which are curved and increase the strength and durability of the parts. This construction prevents any wind, rain or snow entering the chimney. A vertical flange 30 is mounted on the horizontal propelling blades and arranged adjacent to the inner ends of the vertical blades to exclude water. The gases ascending the chimney and cylinder enter the drum, and the rotation of the latter causes the said gases, smoke, vapors and the like to be expelled by centrifugal force.

The chimney is connected with the various rooms or compartments of a house or other building as illustrated in Fig. 5 of the accompanying drawings, and a suitable damper 29 may be provided to regulate the ventilation.

The ventilator is adapted to be employed as a motor for actuating light running machinery, and any suitable connections between such and the vertical shaft may be employed.

What I claim is—

1. In a ventilator, the combination of a cylinder designed to be secured to a chimney or the like, a vertical shaft journaled in the cylinder and extending above the upper end thereof, a vertically disposed screw 5 carried by the shaft and arranged within the cylinder, and a drum rotatively mounted on the upper end of the cylinder and secured to the shaft and provided with a series of radially disposed vertical blades and provided with propelling blades, arranged within the drum at the bottom thereof, substantially as described.

2. In a ventilator, the combination of a cylinder designed to be secured to a chimney, a vertical shaft journaled therein and extending above the same, a vertically disposed screw arranged within the cylinder and secured to the shaft, and a drum provided with vertically disposed blades and having horizontally disposed propelling blades arranged within the drum at the bottom thereof adapted to cause a rotation of the drum, substantially as described.

3. In a ventilator, the combination of a cylinder designed to be secured to the top of the chimney, a drum rotatively mounted on the top of the cylinder and comprising a top having a conical shape, an inverted cone arranged beneath the top, horizontally disposed propelling blades arranged within the drum and at the bottom thereof, and the vertical blades extending radially from the center of the drum and secured to the inverted cone and the horizontal blades, substantially as described.

4. In a ventilator, the combination of a cylinder adapted to be secured to the top of a chimney, and a drum rotatively mounted on the cylinder and provided with interiorly arranged horizontally disposed propelling blades and provided with radially disposed vertical blades having their outer portions arranged at an angle and adapted to expel impure air, gases, vapors and the like by centrifugal force, substantially as described.

5. In a ventilator, the combination of a cylinder designed to be secured to the top of a chimney, a drum rotatively mounted thereon and having horizontally disposed propelling blades and provided with vertically disposed blades, and the exteriorly disposed concavo-convex propelling blades arranged on the top of the drum, substantially as described.

6. In a ventilator, the combination of a cylinder adapted to be secured to a chimney and provided at its upper end with openings, a drum rotatively mounted on the cylinder and having vertically disposed blades extending radially from the center, said drum being provided with propelling blades, and a screw arranged within the cylinder and carried by the drum, substantially as described.

7. In a ventilator, the combination of a cylinder, a drum rotatively mounted on the top of the same and having a conical top, the exteriorly disposed propelling blades secured to the top of the drum and provided with longitudinally disposed curved corrugations and the vertical blades arranged within the drum and forming series of exit openings, substantially as described.

8. In a ventilator, the combination of a cylinder, a drum rotatively mounted thereon and provided with propelling blades, and the vertically disposed blades extending radially from the center of the drum and provided in their outer portions with vertically disposed curved corrugations, substantially as described.

9. In a ventilator, the combination of a cylinder, a drum rotatively mounted on the cylinder and provided with propelling blades and having vertically disposed blades extending rigidly from the center of the drum and forming exit openings, and a cornice secured to the cylinder and arranged at the base of the drum and provided with elongated openings and having flaring supply tubes depending from the openings, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES WILLIAM LOCHMAN.

Witnesses:
K. L. COOPER,
L. F. COOPER.