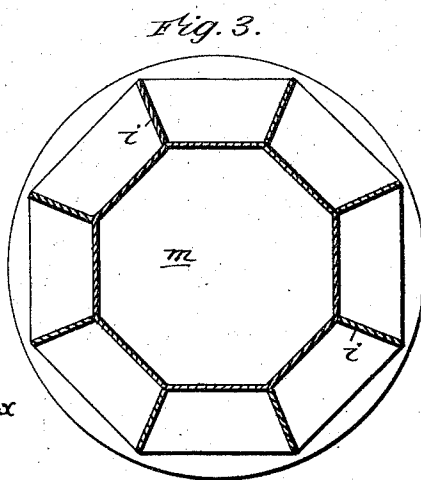
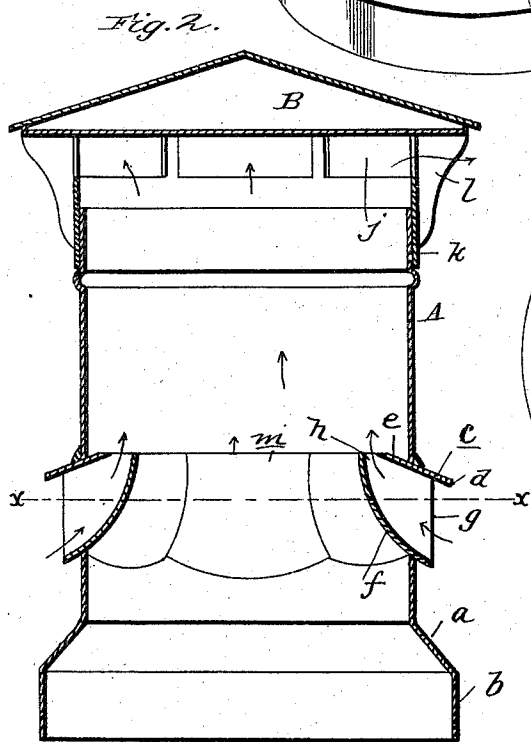
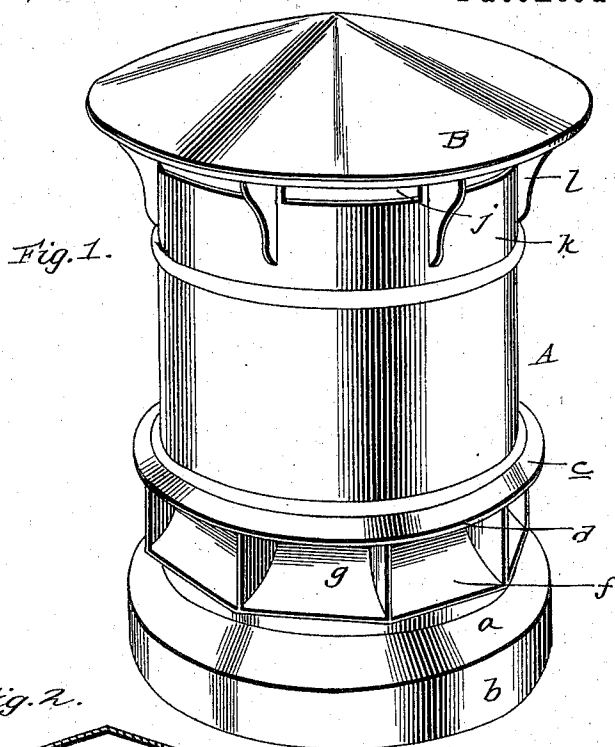


(No Model.)

J. BONNER.
VENTILATOR.

No. 576,427

Patented Feb. 2, 1897.



Witnesses:
Chas. Raeder
W. A. James

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UNITED STATES PATENT OFFICE.

JOHN BONNER, OF TIBURON, CALIFORNIA.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 576,427, dated February 2, 1897.

Application filed May 2, 1896. Serial No. 589,966. (No model.)

To all whom it may concern:

Be it known that I, JOHN BONNER, a citizen of the United States, residing at Tiburon, in the county of Marin and State of California, have invented certain new and useful Improvements in Ventilators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in ventilators for cars, and is more especially adapted for freight-cars used in the transportation of meats, fruits, vegetables, and perishable produce.

I have found by experience that in order to exhaust the interior of the car from all deleterious odors, vapors, gases, &c., it is necessary to keep up a constant and uninterrupted suction, and to do this a construction must be provided which will receive the external atmosphere from all points without interruption and take the same in currents so as to direct them upwardly and into the open air again at an altitude higher than the receiving-point. I have also learned that while there should be as little interruption as possible given to the pure atmosphere in its passage upwardly through the ventilator means should be provided for guarding against the counteraction of currents and the consequent casting down of the same while the car is in rapid motion, and that a natural upward draft should be maintained while the car is not in motion regardless of the direction of the wind or atmosphere.

With these ends in view I shall proceed to describe the construction and operation of my invention, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved ventilator. Fig. 2 is a vertical sectional view of the same, and Fig. 3 is a cross-sectional view taken in the plane indicated by the dotted line *xx* of Fig. 2.

Referring by letter to said drawings, A indicates the body of my improved ventilator, which may be made of sheet metal or other suitable material and is of a circular or cylindrical form in cross-section. The body is of a sufficient height and is flared outwardly near its lower end, as shown at *a*, so as to af-

ford a large entrance, and terminates in a vertical portion or flange *b*, whereby it may be secured to the top of a car and over an opening therein by any suitable fastening devices. At a suitable altitude above the flared portion the body is provided with a circumferential opening and at the top of this opening is a wall *c*, which extends laterally and circumferentially for a sufficient distance, as shown at *d*. This wall is disposed obliquely and its inner end or edge extends a sufficient distance within the body of the ventilator, as shown at *e*. A lower wall *f* is also provided in this opening and is here shown as having its outer edge projected beyond the outer surface of the body, but not to as great an extent as the upper wall *e*. This lower wall is curved, as shown, and is also disposed obliquely. It will be observed that the two walls are so disposed with respect to each other as to present an enlarged mouth *g* and a reduced throat *h*, which latter is directed upwardly and forms a complete circle within the body. This circular duct or entrance is divided at suitable distances with vertically-disposed partitions *i*. By this construction it will be seen that the atmosphere will be admitted into the ventilator regardless of the direction in which the same may be blowing, and such currents will be directed upwardly, so as to absolutely prevent any downward draft.

At the top of the body I provide a conical cap. This cap B is of a much greater diameter than that of the body and is sustained upon the body so as to leave a circular opening *j* entirely around and above the upper end of the body. I have shown the cap as detachable from the body and connected to a band *k* by strips *l*. The band may be placed over the upper edge of the body, although in some cases the top may be a fixed part of the body. The strips *l* may be narrow, so as to afford but little resistance to the air in its passage from the ventilator.

It will be observed that the curved walls *f*, which form the inlet-passages for the air-currents, also form a contracted central opening *m* for the passage of the gases rising from the interior of the car. The walls being rounded on their inner sides will afford no interruption to the passage of such gases as they are drawn up by the suction.

Having described my invention, what I claim is—

5 The herein-described ventilator consisting essentially of the cylindrical body Δ , having the base adapted to be secured to the top of a car and also having the circumferential opening adjacent to said base, the continuous circular wall f , connected at an intermediate point of its width to the edge of the body Δ ,
10 at the bottom of the circumferential opening thereof and curved upwardly and inwardly within the body so as to form a central contracted portion m within the body, the continuous flat and circular wall c , connected at
15 an intermediate point of its width to the edge of the body Δ , at the top of the circumferential opening thereof and inclined upwardly and inwardly toward the center of the body Δ , and the thin vertical partitions g , arranged
20 between and connected at their lower and up-

per edges to the walls f , c , respectively and serving in conjunction with said walls to form a plurality of induction-openings each with an enlarged mouth or outer end and a contracted throat or inner end; the whole being
25 arranged so as to direct air-currents from all points into a central volume within the body Δ , the top arranged upon the upper end of the body Δ , and having its peripheral edge projected laterally therefrom and elevated as
30 shown so as to form the continuous passage j , beneath the top, and the vertical strips supporting said top, substantially as and for the purpose set forth.

In testimony whereof I affix my signature 35 in presence of two witnesses.

JOHN BONNER.

Witnesses:

JAMES L. KING,

W. N. KEMPSTON.