

P. H. CARMAN.
Ventilating and Warming-Drum.

No. 159,074.

Patented Jan. 26, 1875.

Fig: 1.

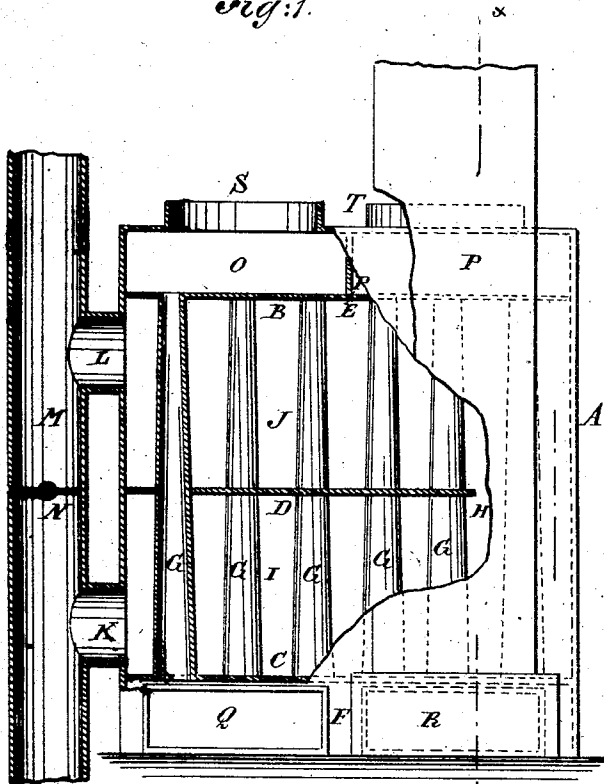


Fig: 2.

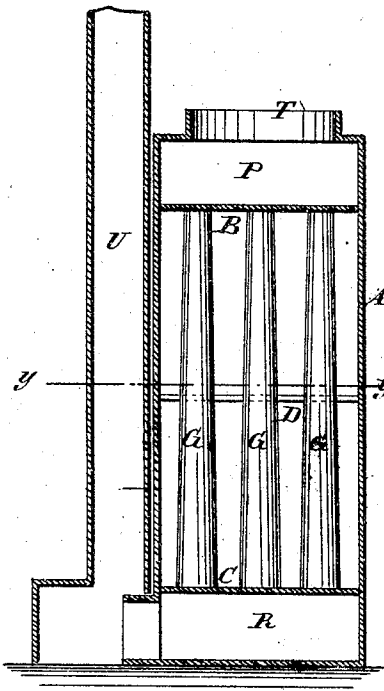


Fig: 3.

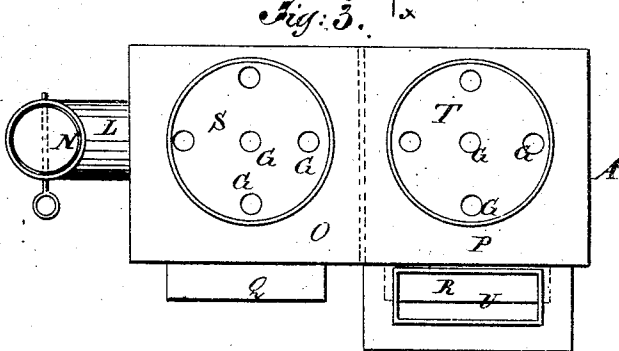
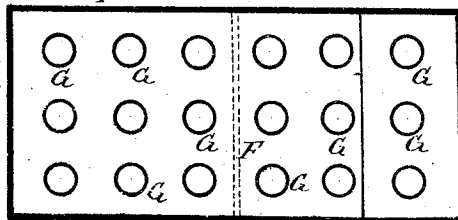


Fig: 4.



WITNESSES:

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PETER H. CARMAN, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN VENTILATING AND WARMING DRUMS.

Specification forming part of Letters Patent No. 159,074, dated January 26, 1875; application filed December 12, 1874.

To all whom it may concern:

Be it known that I, PETER H. CARMAN, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Ventilator and Warmer, of which the following is a specification:

The invention will first be fully described, and then pointed out in the claims.

In the accompanying drawing, Figure 1 represents a sectional side elevation of the ventilator and warmer. Fig. 2 is a vertical cross-section of Fig. 1, taken on the line *x x*. Fig. 3 is a top view. Fig. 4 is a horizontal section of Fig. 1, taken on the line *y y*, showing the tubes and the position of the partitions, the upright foul-air flue being left off.

Similar letters of reference indicate corresponding parts.

This ventilator is placed in a fire-place, or in a room or apartment of a building, or in any position where it can be connected with a flue or chimney of a furnace or fire. It may be made square or angular, as seen in the drawing, or circular, as may be desired.

In this example of my invention the ventilator is rectangular in cross-section, and of a height about equal to the breadth, thus forming a box, A, in which are horizontal partitions B, C, and D, and vertical partitions E and F. G are tubes of greater diameter at the bottom than at the top, which extend from the lower partition, B, to the upper partition, C, all passing through the central partition, D, with the exception of the outside tier. This central partition is cut short at the point H to allow the heat to pass from the lower compartment, I, to the upper compartment, J, by means of the flues K L. M represents the chimney or fire-flue, and N is a damper between the flues K L. Above and below the horizontal partitions B C are two compartments—that is, two above and two below—marked O P and Q R. There are six tiers of tubes shown, half of which connect the compartments O and Q, and half connect the com-

partments P and R. On the top of the ventilator is a discharge-aperture for each of the compartments O P, marked S and T.

The fresh air is admitted into the compartment Q by means of an air-tube, and passes up through the left-hand tiers of tubes G, by means of which the air is heated and discharged into the chamber O, from whence it is conveyed through the aperture S to the apartment, or to any desired place. At the same time the foul air at the bottom of the apartment is drawn into the chamber R, an upward draft being induced by the heat with which the tubes are surrounded, and is carried into the chamber P and discharged into a chimney or flue, and conducted from the building.

U represents a flue for carrying off foul air, through which an upward draft is produced by means of heat, or by its extended length, and a down-draft is induced through the ventilator tubes G. Apertures may be made in this flue for drawing the air from the upper apartments of a building while such air is supplied from the discharge-tube S of the ventilator. Dampers suitable for the purpose may be applied in connection with the flue U.

By means of this ventilator an inward draft of warm, fresh, and pure air, and an outward draft of impure air are produced, which is the essence of all thorough ventilation.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of connected chambers Q O P R with tubes G, as and for the purpose described.

2. The combination, with tubes G, of the chambers I J, connected by tubes L K with the dampered pipe M N, as and for the purpose specified.

PETER H. CARMAN.

Witnesses:

T. B. MOSHER,
ALEX. F. ROBERTS.