P. LEAR.

Ventilator.

No. 46,913.

Patented March 21, 1865.

Fig: 1.

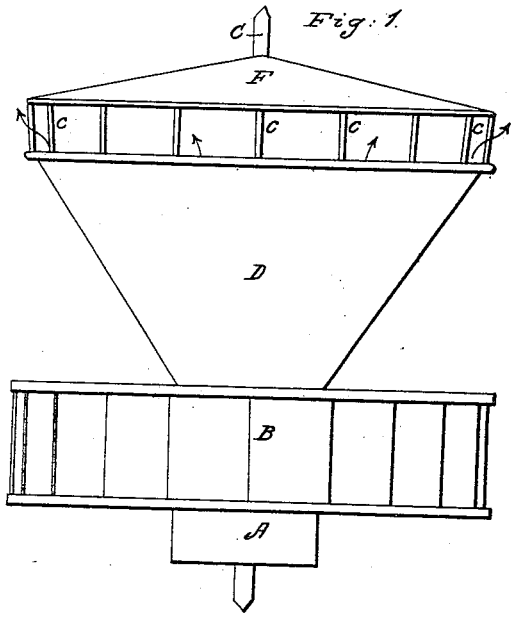


Fig: 3.

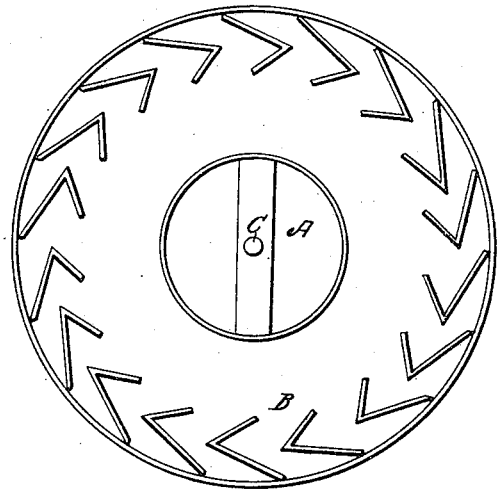
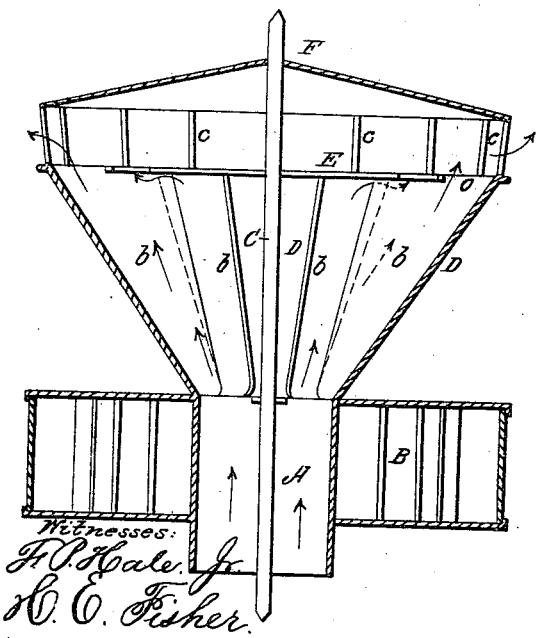
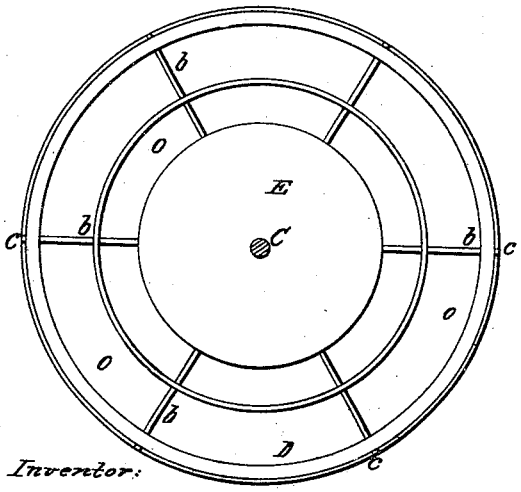


Fig: 2.



Witnesses:
F. P. Hale. Jr
H. C. Fisher

Fig: 4.



Inventor:
Peter Lear.
by his Attorney:
R. H. Eddy.

UNITED STATES PATENT OFFICE.

PETER LEAR, OF MEDFORD, MASSACHUSETTS.

IMPROVED VENTILATOR.

Specification forming part of Letters Patent No. **46,913**, dated March 21, 1865.

To all whom it may concern:

Be it known that I, PETER LEAR, of Medford, in the county of Middlesex and State of Massachusetts, have invented a new and useful Ventilator for Chimneys or Air-Flues; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a side elevation, and Fig. 2 a vertical section, of it. Fig. 3 is a horizontal section taken through the impelling-wheel of the ventilator. Fig. 4 is a horizontal section taken between the covering-cap and the conical case, and so as to exhibit the current deflector and the radial wings or flanges of the said case.

In such drawings, A denotes a vertical pipe or conduit passing upward concentrically through and being fixed to a wind-wheel or propeller, B, but having no passage leading into the same. The tube A′ is open both at top and bottom, and at its upper end leads into and is surmounted by an inverted conical case, D, having within it and projecting from its sides a series of wings or flanges, *b b b*, arranged radially. A circular plate, E, rests on and is fixed to the upper ends or parts of the flanges, and is arranged with respect to such flanges in manner as shown in Figs. 2 and 4—viz., so that there may be openings *o o* between the said plate, the case D, and the upper parts of the several wings. The plate E serves as a deflector to facilitate the passage of smoke into the spaces between the flanges when the apparatus may be in operation on top of a chimney or flue. A weather cap or dome, F, surmounts the case D, and is supported above it by means not only of sundry small rods or columns *c c c*, but by a spindle, C, which extends from the said cap or dome down through the middle or axis of the ventilator, in manner as shown in Fig. 2.

When the apparatus is applied to the top of a chimney, the lower part of the tube A should enter or be arranged directly over a round hole made in a plate capping the chimney or flue, and the spindle should be suitably stepped and supported, so as to enable the ventilator to be freely revolved by a current of wind when blowing against any of the buckets or wings *a a* of the wind-wheel or propeller B, from whatever part of the compass the wind may be blowing. Under these circumstances the rotation of the ventilator will induce a current up the chimney or flue, such current serving to facilitate the passage of smoke or foul air up the chimney or flue and its discharge through the ventilator. While the conical case D, with the radial flanges, deflector-plate, and weather cap or dome may be in revolution, the air at or about the axis of the said case will, by the centrifugal force generated within it, be thrown outward toward the inner surface of the case, which, owing to its conical form, will deflect the air upward toward the mouth or upper part of such case, from whence it may be ejected, the plate E operating at the same time to aid in deflecting the air and to afford support to the several flanges.

The weather-cap protects the open mouth of the case D from rain, snow, and downward drafts or currents of wind. On removal of the weather-cap and inverting the ventilator it may be used to induce a downward current in the chimney or flue. In this way it will be specially useful for supplying fresh air to apartments or places where such may be desirable.

I do not herein claim the combination of a wind-wheel arranged on a chimney with a screw-propeller disposed within the said chimney.

What I claim as my invention is as follows, viz:

1. The combination as well as the arrangement of the wind-wheel B, the conduit A, the inverted conical case D, and its series of radial flanges *b b*, the whole being applied to a spindle, C, substantially as and so as to operate as hereinbefore explained.

2. The combination as well as the arrangement of the wind-wheel B, the conduit A, the inverted conical case D, the series of radial flanges *b b*, and the deflector E, the whole being applied to a spindle, C, substantially as and so as to operate as hereinbefore specified.

3. The combination as well as the arrangement of the wind-wheel B, the conduit A, the inverted conical case D, the series of radial flanges *b b*, and the weather-cap F, the

whole being applied to a spindle, C, substantially as and so as to operate as hereinbefore described.

4. The combination as well as the arrangement of the wind-wheel B, the conduit A, the inverted conical case D, the series of radial flanges or wings *b b*, the deflector E, and the weather-cap F, the whole being applied to a spindle, C, substantially as and so as to operate as hereinbefore set forth.

PETER LEAR.

Witnesses:
R. H. EDDY,
F. P. HALE, Jr.