P. LEAR.

Ventilator.

No. 45,672. Patented Dec. 27, 1864.

Fig. 3

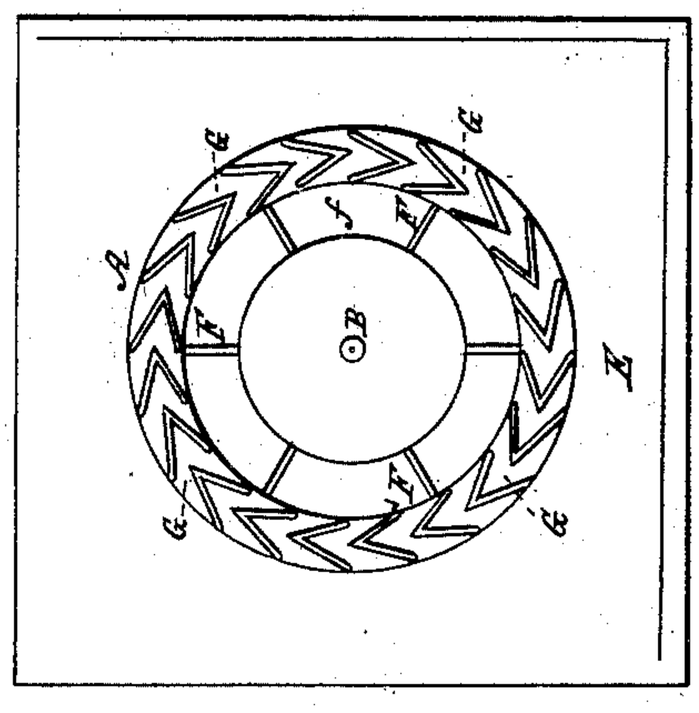


Fig. 4.

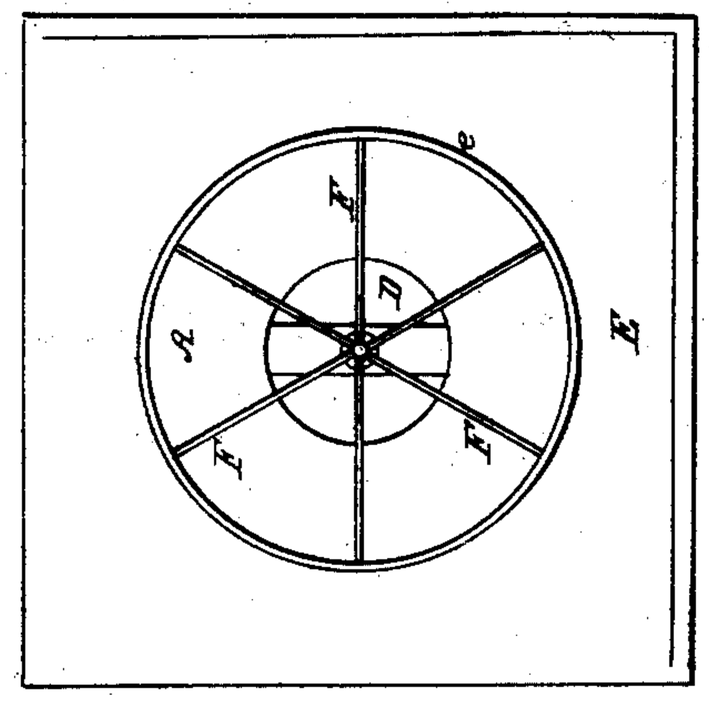


Fig 1

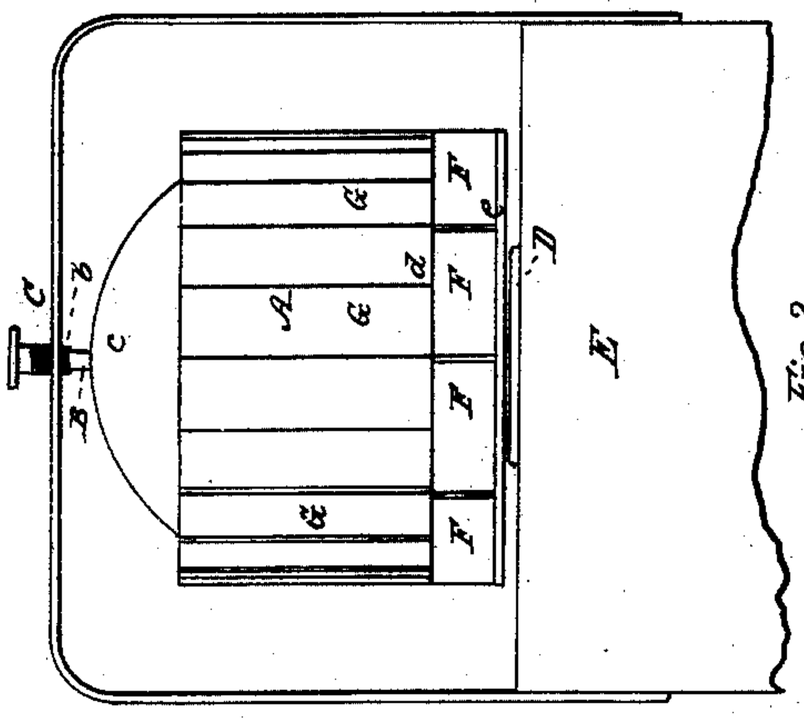
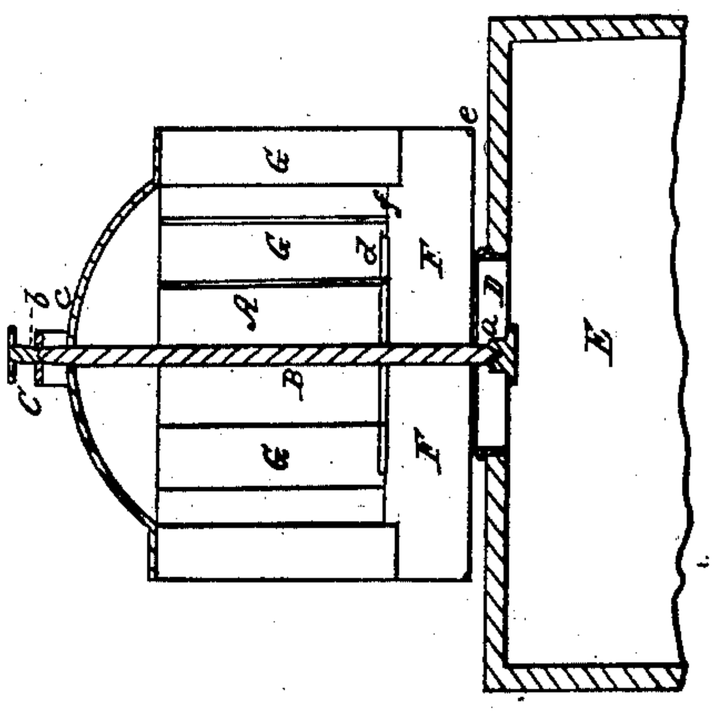


Fig. 2.



Witnesses:

F. P. Hale Jr

H C Fisher

Inventor:

Peter Lear

by his attorney

R H Eddy

UNITED STATES PATENT OFFICE.

PETER LEAR, OF MEDFORD, ASSIGNOR TO HIMSELF, AND SAML. A. BRADBURY, OF DORCHESTER, MASSACHUSETTS.

IMPROVED VENTILATOR.

Specification forming part of Letters Patent No. **45,672**, dated December 27, 1864.

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 or Improved 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 denotes a front elevation, and Fig. 2, a vertical section, of it. Fig. 3 is a horizontal section taken through its impelling buckets or floats. Fig. 4 is a horizontal section taken through its centrifugal and radial wings.

In the said drawings, A denotes a hollow wind-wheel closed at its upper end, *c*, and mounted concentrically with a vertical spindle, B, whose lower end rests in a stop, *a*, and whose upper end is supported in a bearing, *b*, sustained by an arched or bent bar, C, erected over the mouth D or upper end of a smoke-chimney or air-flue, E. Between the lower end, *d*, of the said wind-wheel, and the mouth D of the chimney or air-flue there is a series of upright wings, F F F F, which radiate from the spindle B, and are arranged at equal distances asunder. They may extend beyond the mouth and to the periphery of the lower end or head, *d*, of the wind wheel, and may have a supporting-ring, *e*, affixed to their lower outermost corners. Each of the buckets or floats G of the wind-wheel is angular in its cross-section and is to be arranged with respect to each of the buckets next adjacent to it in manner as represented in Fig. 3. Furthermore, there is an air-passage, *f*, leading through the head *d*, and into the space between each two of the wings, F F F F. It is through this air-passage that the surplus air of the wind-wheel is drawn by the action of the wings while the ventilator may be in revolution.

When it may be desirable to discharge air or smoke from the chimney or flue, the series of wings should be placed above the mouth D; but when it may be desirable to force air into and down the flue or chimney, these wings should be disposed directly below the said mouth and within the chimney or flue.

When a current of air may be blowing against the buckets or floats of the said wind-wheel, it will generally set such wheel and the series of wings in rapid revolution. This rotary movement of the series of wings will cause the air in the sectoral spaces immediately between them to be discharged centrifugally, a like amount of air at the same time passing through the mouth D to supply the place of the discharged air. In this way a draft may be created in the flue or chimney, the surplus air blown into the wheel being discharged therefrom by the fans or wings. Under this construction the wheel will be found to operate to better advantage than were it unprovided with the openings or passages leading from it into the spaces between the wings.

As a means of creating a draft in a smoke flue or an aerial current through a ventilating-pipe or air-duct, my improved ventilator has been found to be highly serviceable.

I claim—

The said improved ventilator, constructed substantially in manner and so as to operate as described.

PETER LEAR.

Witnesses:

R. H. EDDY,

F. P. HALE, Jr.