P. LEAR.

Chimney Cap.

No. 52,177. Patented Jan'y 23, 1866.

FIG. 2

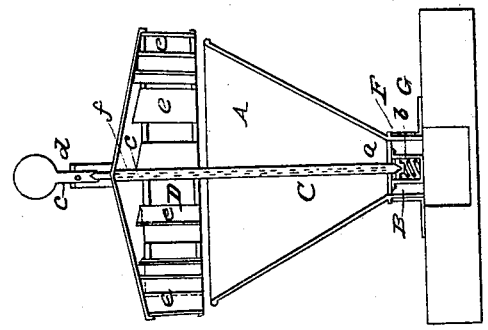


FIG. 3

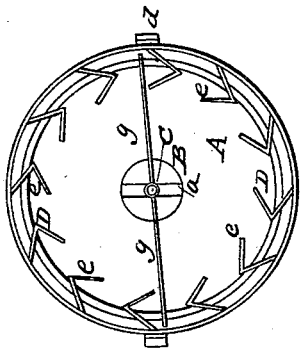
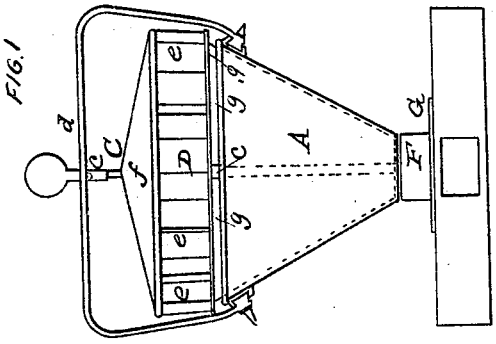


FIG. 1



WITNESSES

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UNITED STATES PATENT OFFICE.

PETER LEAR, OF MEDFORD, MASSACHUSETTS.

CHIMNEY-CAP OR CONICAL VENTILATOR.

Specification forming part of Letters Patent No. **52,177**, dated January 23, 1866.

To all whom it may concern:

Be it known that I, PETER LEAR, of Medford, of the county of Middlesex and State of Massachusetts, have invented an Improved Apparatus for Discharging Smoke or Foul Air from a Chimney-Flue or an Apartment; 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 front elevation, Fig. 2 a vertical section, of it, and Fig. 3 is a horizontal section, taken through the propelling or wind wheel of it.

In such drawings, A is a conical case, having its larger end upward. At its lower or lesser end the case is connected to a support-tube, B, across the lower part of which a bar, , is arranged and fixed, such bar serving to support the step or bearing *b* of a vertical spindle, C, whose upper end is pivoted on a rod, *c*, extending through an arched bar, *d*, such bar being arranged with respect to the case as shown in Figs. 1 and 2. The arched bar *d* is fastened at or near its two ends to the upper part of the case.

A short distance above the case there is a wind-wheel, D, consisting of a series of angular buckets or plates, *e e*, disposed in a circle, and affixed to and projecting down from a concavo-convex or conical disk or cap, *f*, which is fastened to the spindle concentrically therewith.

Furthermore, there extends from that portion of the spindle which is within the case C one or more trapezoidal wings or plates, *g g*, which rotate with the spindle and its wind-wheel, and are rotated by the action of the wind against the buckets of the latter.

A socket-tube, F, fixed to a plate, G, to cap a chimney or flue, and being open at each end, receives the support-tube B and serves to sustain the remainder of the apparatus.

When the wind may be blowing against the buckets of the wheel it will set the wheel and the wings *g g* in revolution. These wings, by their action against the air within the case, will force it against the inner inclined surface of such case, which will deflect it upward toward and into the wind-wheel and the space between it and the case; from thence it will be discharged into the surrounding atmosphere. In this way an upward current or draft will be induced through the apparatus, and smoke or noxious air or gases be extracted from a flue or apartment when in communication with the apparatus.

Were the case C cylindrical it would not, like a conical case, deflect upward all the air thrown against it, but would tend to throw much of such air downward into the flue. Thus there is a great advantage gained by a conical over a cylindrical case when employed with a wind-wheel and a set of wings, or the equivalent thereof. When a cylindrical case has been so used with a wind-wheel arranged over it it has become necessary to employ a screw-propeller, or its equivalent, in the case, as such propeller, by its peculiar action, produced the upward current. By using the fulcrum-plate wings and a conical case, as hereinbefore described, we not only are able to simplify the apparatus and cheapen its construction, but we produce by the case the upward deflection of the centrifugal currents of air thrown against its inner surface.

By inverting the wings and conical case and arranging the wind-wheel at a distance above the latter, and opening the larger end of the case into a support-tube, and properly sustaining the spindle so that the wind-wheel may be capable of revolving, we shall prepare the apparatus for forcing air downward into a flue, and thus be able to make use of it to propel fresh air into an apartment or the hold of a vessel when in communication therewith.

Having thus described my invention, what I claim is as follows:

1. The combination as well as the arrangement of the stationary conical case A with one or more rotary wings, *g*, and a wind-wheel, D, or buckets and cap, applied to the spindle C.

2. The combination as well as the arrangement of the support-tube B with the stationary conical case A, one or more rotary wings, *g*, and a wind-wheel, D, applied to spindle C.

3. The combination as well as the arrangement of the socket-tube F, applied or to be applied to the chimney, with the support-tube

B, the stationary conical case A, and one or more rotary wings, *g*, and a wind-wheel, D, arranged as specified.

4. The application of the step-bar *a* of the spindle to the support-tube B, when combined with a conical case, A, having one or more rotary wings, *g*, and a wind-wheel, D, arranged with respect to it and applied to a spindle, C, as described.

5. The application of the pivot-supporting bar *d* directly to the conical case A, having one or more rotary wings, *g*, and a wind-wheel, D, arranged and combined with it, as specified.

PETER LEAR.

Witnesses:
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F. P. HALE, Jr.