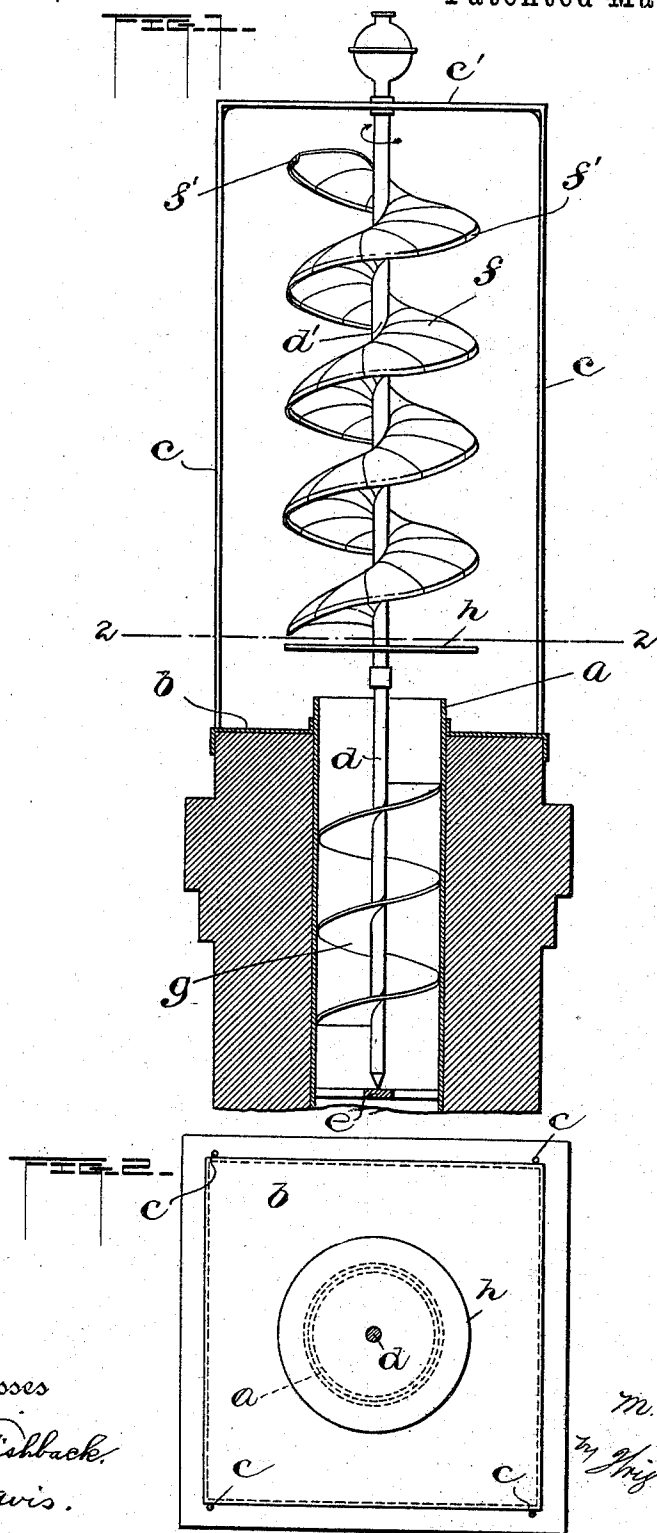


(No Model.)

M. C. PARKHURST.
VENTILATOR.

No. 535,724.

Patented Mar. 12, 1895.



Witnesses
Thos. Fishback,
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UNITED STATES PATENT OFFICE.

MELVILLE C. PARKHURST, OF SOMERVILLE, MASSACHUSETTS.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 535,724, dated March 12, 1895.

Application filed August 1, 1894. Serial No. 519,150. (No model.)

To all whom it may concern:

Be it known that I, MELVILLE C. PARKHURST, of Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Ventilators, of which the following is a specification.

The present invention relates to ventilators for use on buildings such as work-shops, prisons, and the like, to remove foul air, and has in view the provision of a device possessing great simplicity of construction and great efficiency in operation.

I contemplate employing as a propeller a spiral blade wound closely about a spindle and being made concavo-convex in cross-section, either by simple curvature or by a pronounced marginal flange, or both. Such a blade exposed to wind-currents is found to rotate at a very high rate of speed, which is an essential to a successfully operating ventilator. The spindle will carry an exhaust-fan which works in the chimney or shaft to be ventilated.

The claims appended define the invention, and the accompanying drawings illustrate an embodiment of it.

Figure 1 shows a sectionalized side elevation of the ventilator applied to a chimney.

Fig. 2 shows a section on line 2—2 of Fig. 1.

The ventilator comprises a pipe *a* designed to fit the inside of the chimney; a plate *b* surrounding the upper part of said pipe and secured to it and designed to rest on the top of the chimney, the said plate having a flange or skirt to prevent lateral shifting; a frame erected on said plate and composed of corner-posts *c* and a spider *c'*; a spindle, preferably made in two parts *d* and *d'* and journaled at its upper end in the spider *c'* and at its lower end in a spider *e* fastened in the pipe *a*; the spiral propelling blade *f* winding closely about the upper section *d'* of the spindle and secured thereto, and being somewhat concavo-convex in cross-section and also formed with a marginal flange *f'*; a spiral blade *g* wound about the spindle-section *d* and secured to it, said blade closely approximating the pipe *a* in diameter; and a baffle-plate *h* fastened to the spindle above the pipe *a* and extending laterally beyond the same.

It is to be noted that the concavity of the propeller-blade is on the under side, and therefore wind-currents sweeping across the blade revolve the same by acting on its concave under side, whereas they slide off its convex upper side with little retarding effect. The consequence is a very high speed of rotation, depending of course on the velocity of the wind.

The blade *g* is wound in the same direction as the blade *f*, and hence by its rotation air is induced up and out of the chimney.

The baffle-plate *h* is to prevent wind from beating down into the chimney.

Where it is desired to force air down into a chimney, the lower blade will be wound accordingly, and the baffle-plate dispensed with.

An apparatus of the character described is well adapted for stationary location, as an ordinary wind will drive the propeller-blade at a high rate of speed, say two hundred revolutions or more per minute.

The device does not rely for its operation on any artificial air currents. Besides its advantages as a ventilator, the device is useful in promoting a draft to aid combustion.

The propelling blade herein described may be used in other connections than shown, as for instance as a means for pumping water after the manner of a wind mill.

What I claim as my invention is as follows:

1. A ventilator comprising in its construction an open supporting frame, a spindle journaled therein, a spiral blade winding closely about said spindle and secured thereto, said blade being concavo-convex in cross-section, and an exhaust-fan carried by the spindle and designed to work in the chimney or shaft.

2. A wind-propelled device comprising a spindle and suitable supports therefor, and a spiral blade winding closely about said spindle and secured thereto, said blade being concavo-convex in cross-section.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 26th day of July, A. D. 1894.

MELVILLE C. PARKHURST.

Witnesses:

WILLIAM QUINBY,
HORACE BROWN.