M. M. CAMP.

Chimney Cowl.

No. 9,193.

Patented Aug. 17, 1852.

Fig. 2

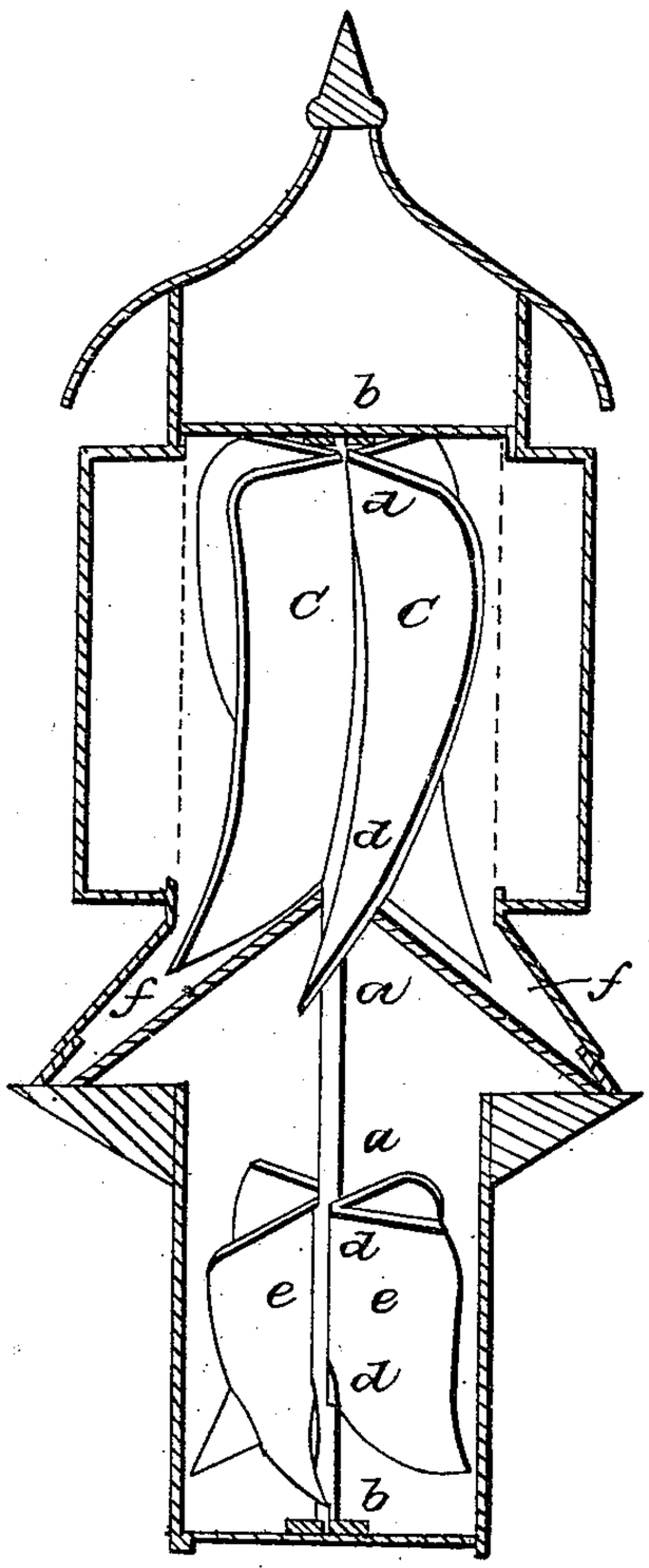
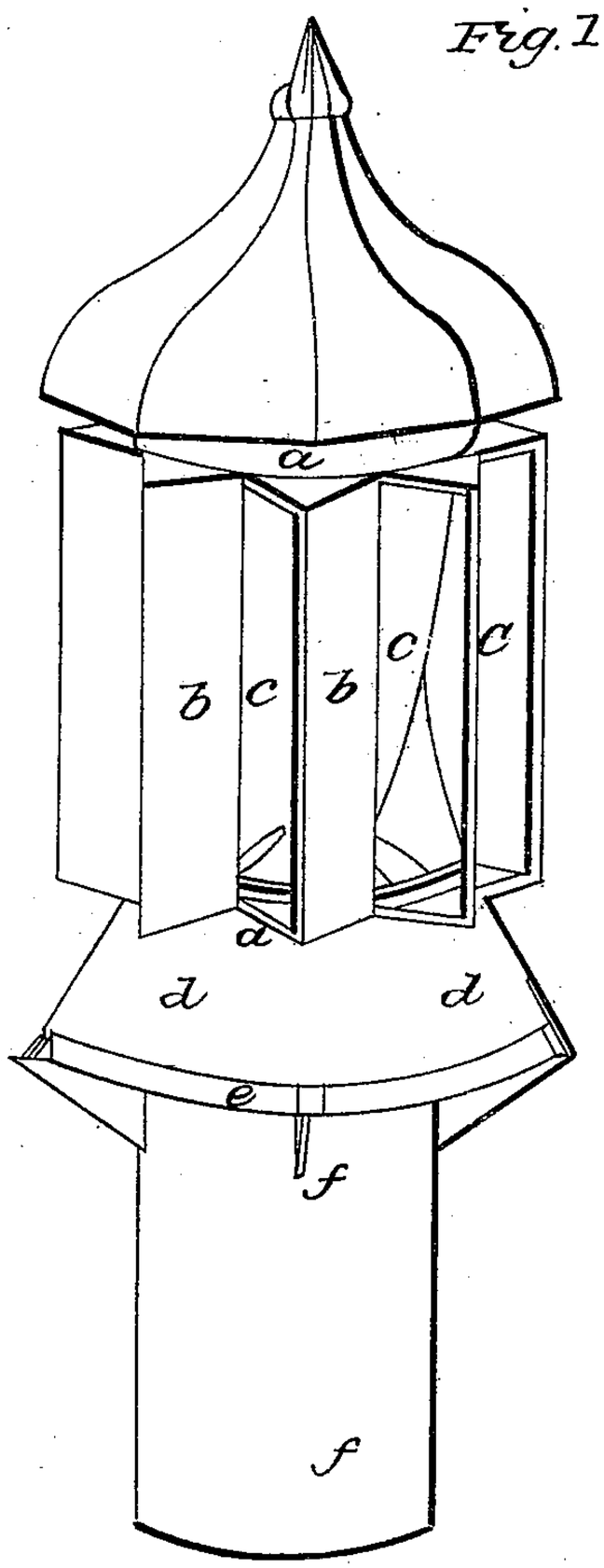


Fig. 1



UNITED STATES PATENT OFFICE.

MORTIMER M. CAMP, OF NEW HAVEN, CONNECTICUT.

VENTILATOR.

Specification of Letters Patent No. 9,193, dated August 17, 1852.

To all whom it may concern:

Be it known that I, MORTIMER M. CAMP, of the city and county of New Haven, in the State of Connecticut, have invented a new and useful Improvement in Machines to be Used as Ventilators or for Any other Similar Purpose; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1, is a perspective view of the whole machine when completed as a ventilator. Fig. 2, is a perspective view of the interior of the same.

I construct of metal, or of any other suitable material, a hollow cylinder, tube, or pipe, (*a a* Fig. 1), of the required size, (say seventeen inches in diameter and two feet long,) to be placed vertically, the exterior of which except the end consists of a suitable number (say eight) flanges or slats, (*b*, *b*, Fig. 1,) of uniform size, and equidistant from each other, the aggregate width of which is about equal to the girth of said cylinder. The right hand edge of said flange or slats, I attach firmly to the periphery of said cylinder, so that said flanges or slats shall project to the left from the said periphery, somewhat as tangents thereto; but at an obtuse angle with the diameter of said cylinder from the point of their contact therewith. This leaves an open space (*c*, *c*, Fig. 1) nearly equal to their width between the said flanges respectively for the influx of air; so that the wind striking against said flanges and entering said cylinders through said open spaces, from whatever direction it may come, will be deflected to the right. The upper end of said cylinder may remain open, or may be protected by any suitable covering. Upon the lower end of said cylinder I place a hollow truncated cone or circular flange, of a conical form, (*d*, *d*, Fig. 1) the upper end fitting closely upon and firmly attached thereto, and the lower part flaring outward therefrom (say four inches), on all sides. Under and within said truncated cone and sufficiently distant therefrom to permit the free passage of air between the two as hereinafter described; I attach a hollow cone, (*e*, *e*, Fig. 1,) of which the apex coincides with the axis of said cylinder and the lower part projects outward as far as the outward edge of said truncated cone, which two cones constitute my improvement.

Underneath the last described cone, I attach the end of a hollow cylinder, tube, or pipe (*f*, *f*, Fig. 1) of the length and size I desire, (say two feet long and fourteen inches in diameter) with sufficient space between the same and the lower surface of said hollow cone for the free passage of air as hereinafter described, the said two cylinders (*a*, *a*, and *f f* Fig. 1) and the said last described cone (*e*, *e*, Fig. 1) being so arranged and combined that the axis of the said upper cylinder (*a a* Fig. 1,) extended downward shall pass through the apex of said lower cone, (*e e* Fig. 1) and be coincident with the axis of said lower cylinder. Through the axes of the said two cylinders thus connected and through the apex of said lower cone I run a small spindle or shaft (*a*, *a*, Fig. 2) supported by and revolving in proper bearings (*b*, *b*, Fig. 2) at each end. Upon said shaft and firmly attached thereto, in the upper cylinder, I construct a wheel consisting of a convenient number (say four) arms or floats (*c*, *c*, Fig. 2) equidistant from each other, as long and wide as can revolve with said shaft within said cylinder, the said floats winding partly around said shaft to the left from the top in a slightly spiral form with an increasing curve toward their lower ends. Upon said shaft and firmly attached thereto in said lower cylinder I construct a wheel, (*d d* Fig. 2) with a similar number of floats (*e e* Fig. 2) or arms as long and wide as can conveniently revolve thereon curved in a manner similar to those in said upper cylinder but in the opposite direction this said curve in them also increasing toward their lower ends.

My machine (Fig. 1) being properly attached to a chimney or other place from which it is desired to extract a current of air—the wind will impinge upon said flanges or slats upon the exterior of said upper cylinder, and being freely admitted into said cylinder through the same openings between said flanges will be deflected to the right and strike upon the floats of the wheel upon the said shaft in said cylinder causing said wheel and said shaft to revolve with great velocity. In consequence of the peculiar form of the said floats of said wheel the back air will be forced downward and out through the space (*f*, *f*, Fig. 2) between the said two

cones with great force, causing a vacuum under the said lower cone and around the upper end of said lower cylinder. At the same time the wheel upon said shaft in said lower cylinder, revolving in the same direction; from the fact of the floats thereof being curved the other way, will raise up the air upon and around them causing an upward current of air through said lower cylinder so as to supply the aforesaid vacuum around its upper and in this manner a strong current of air is created upward through said lower cylinder. By reversing the positions of said flanges or slats (*b*, *b*, Fig. 1) upon the exterior of said upper cylinder (*a*, *a*, Fig. 1) and also curving said floats (*c*, *c*, Fig. 2) of said wheel (*d d* Fig. 2) thence to the right from the top, the said wheel may be made to revolve in the opposite direction.

I do not claim the upper cylinder *a*, *a*,—the flanges *b*, *b*, attached thereto,—the lower cylinder *f*, *f*, nor either set of the wings upon a vertical shaft therein; but

What I do claim as new and desire to secure by Letters Patent is—

The two cones *d*, *d*, and *e*, *e*, arranged and combined with a ventilator composed of revolving vanes and flanges and cylinders operating as above described and set forth.

MORTIMER M. CAMP.

In presence of—
CHARLES ROBINSON,
JAMES ALBEE.