

(No Model.)

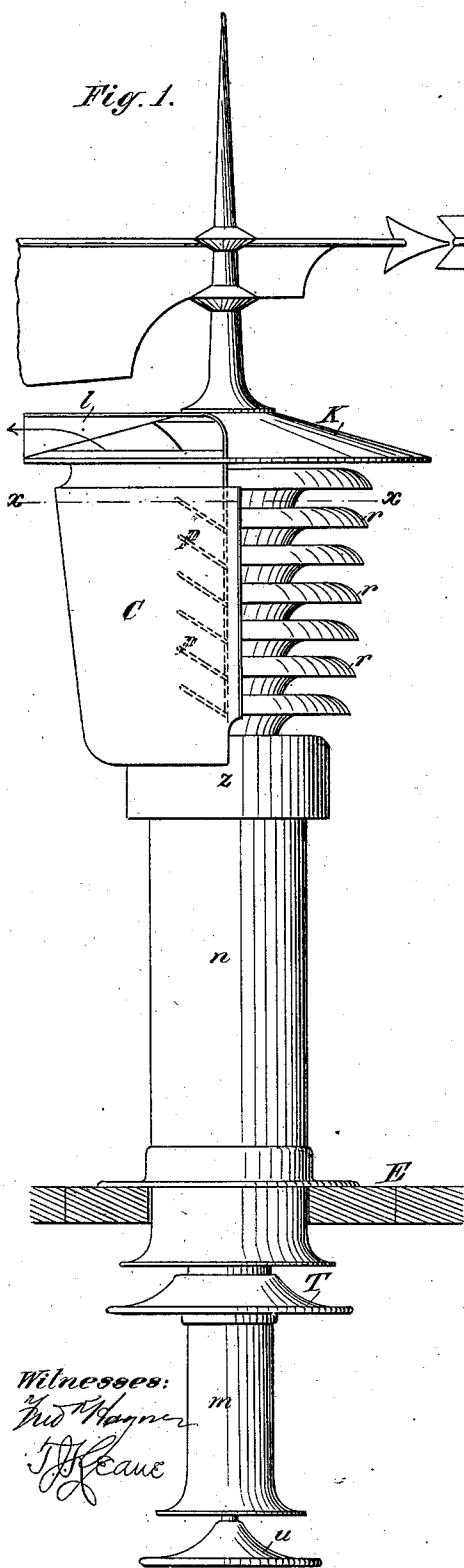
2 Sheets—Sheet 1.

C. MÜLLER.
VENTILATOR.

No. 297,707.

Patented Apr. 29, 1884.

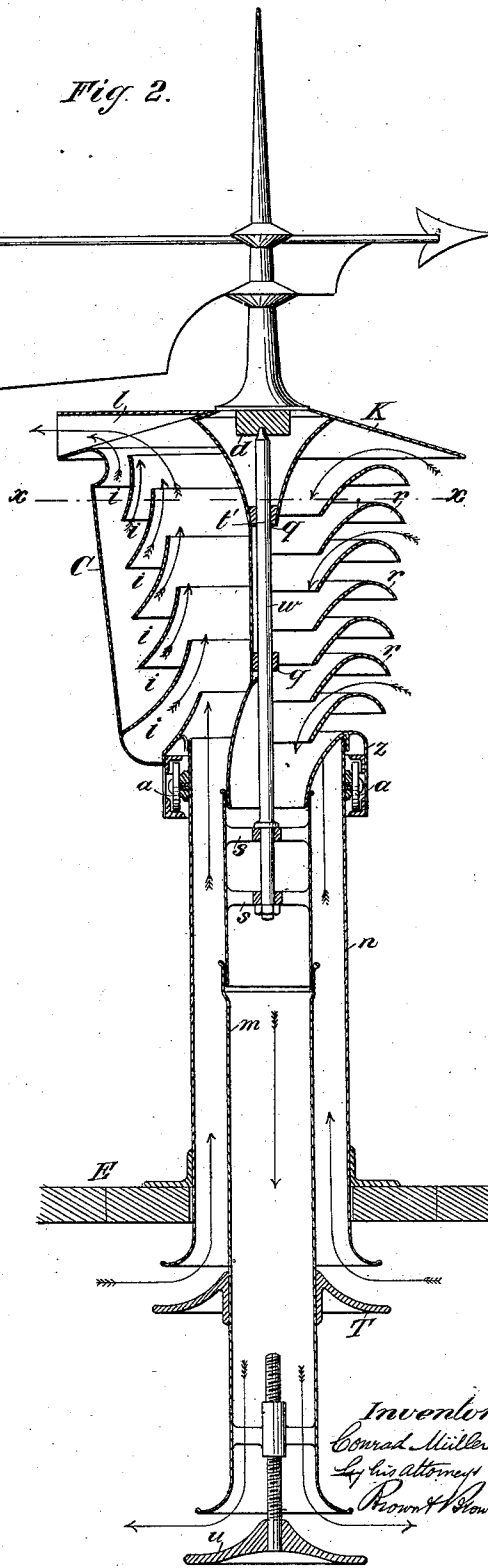
Fig. 1.



Witnesses:

Thos. Wagner
J. H. Kane

Fig. 2.



Inventor:
Conrad Müller
By his attorney
Rowntree & Rowntree

(No Model.)

2 Sheets—Sheet 2.

C. MÜLLER.
VENTILATOR.

No. 297,707.

Patented Apr. 29, 1884.

Fig. 3

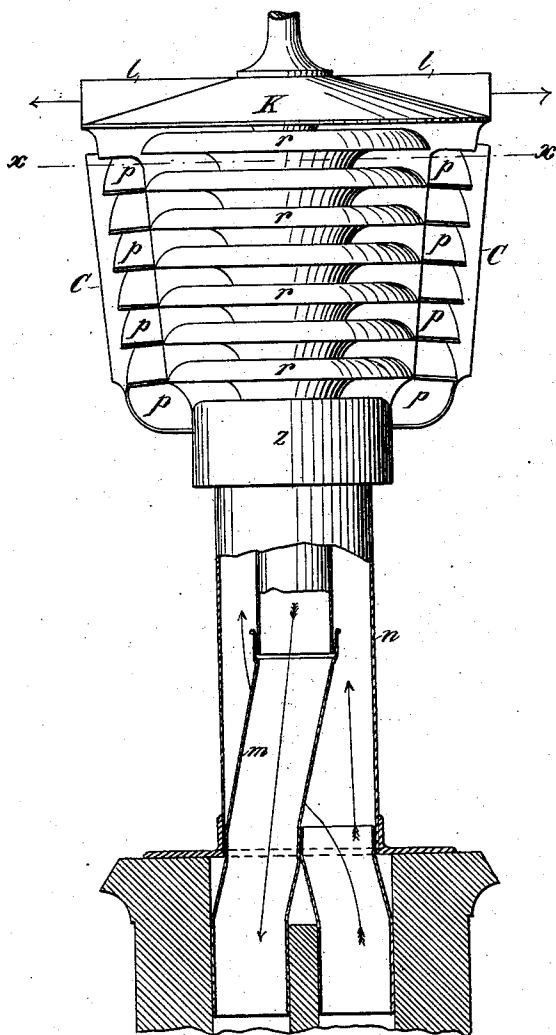
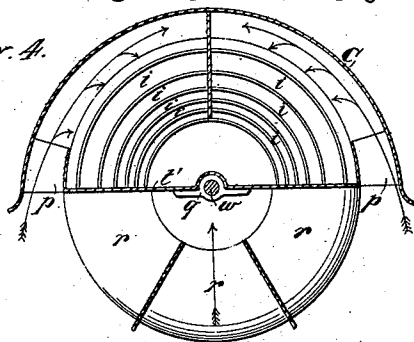


Fig. 4.



Witnesses:
Fred W. Haynes
J. H. Leane

Inventor:
Conrad Müller
by his attorneys
Rosen & Brown

UNITED STATES PATENT OFFICE.

CONRAD MÜLLER, OF HAMBURG, GERMANY.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 297,707, dated April 29, 1884.

Application filed May 23, 1883. (No model.) Patented in Germany September 23, 1882, No. 22,015.

To all whom it may concern:

Be it known that I, CONRAD MÜLLER, of Hamburg, in the Empire of Germany, have invented a new and useful Improvement in Ventilators, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to double-acting ventilators, by which rooms, buildings, ships, or other structures or places can be ventilated by the automatic action of the apparatus forcing fresh air into and carrying at the same time bad air out of the room, building, ship, or other structure or place.

The improvement consists in the combination, with inlet and outlet tubes arranged one within the other, of a cowl of novel construction, hereinafter described.

Figure 1 is a side elevation of a ventilator constructed according to my invention. Fig. 2 is a vertical section of the same. Fig. 3 is a front of the same ventilator, exhibiting a modification of the inlet and outlet tubes. Fig. 4 is a horizontal section in the line *xx* of Figs. 1, 2, 3.

m n are two stationary concentric tubes or channels, of which the inner one, *m*, is the inlet for fresh air, the outer one the channel carrying the bad air away from the room. Over these tubes is fitted the upper part or cowl of the apparatus, which is centered on a stationary rod, *w*, secured to the center tube, *m*, by brackets *s s'*, and partly supported on rollers *a a*, attached to the outer tube, *n*, so that it may be turned freely by the action of the wind on a vane attached to its crown. This cowl is of circular horizontal section, and is divided vertically and centrally by a partition, *t'*. (See Figs. 2 and 4.) The portion of the cowl in front of this partition, which the action of the vane constantly turned toward the wind, is constructed or provided with a number of semicircular sheet-metal funnels, *r r*, mounted a certain distance apart—one above the other—as shown in Fig. 2, so that all communicate with the inlet-tube *m*, which tube may be furnished at its bottom with a valve, *u*, for regulating or closing the opening of the inlet, as may be desirable. The partition *t'*, which forms the back of these funnels, shuts them off from the outlet-tube *n*. The back of the cowl on the opposite side of the partition *t'* is surrounded by a semicircular mantle, *C*, that is

formed slightly eccentric, as shown in Fig. 4, widening toward the front, where it is open at the side edges of the partition-plate *t'*, while at its bottom it is contracted toward and is supported by the outer tube or casing, *n*, with which it communicates. At the top this mantle is connected to a cap or crown, *K*, which is also connected to the partition-wall *t'*, that connects and forms the back of the funnels before described. This crown of the mantle is at the hinder side furnished with one or more openings, *l*, through which the bad air exits into the open air. The mantle is fitted at the back of the partition *t'* and opposite the funnels *r r* with a series of inverted funnels, *i i*, which form communication between the outer tube, *n*, and the opening or openings *l*. The front openings of the mantle at the side edges of the partition-plate *t'* are fitted with inclined deflectors *p p*, to cause the wind blowing into the openings to be deflected upward toward the opening or openings *l*. The bad air is not only removed out of the corresponding room or space by the pressure of the injected fresh air entering through *m*, but it is at the same time sucked out of the room through the outer tube or channel, *n*, by the action of the wind entering the surrounding mantle by the front openings at *p p* at the sides of the funnels, and passing out at *l*. This current of wind, rushing through the semicircular mantle, produces in the hinder part of the cowl and through the inverted funnels *i i* a draft of air in upright direction, (the reverse of the draft in front of the apparatus,) and as the mantle is at its bottom end in connection with the outer channel or tube, *n*, the foul or bad air will be ejected through the latter. The outer tube or channel, *n*, may, at its bottom part, be likewise furnished with a regulating-valve, that may be closed more or less, as desirable.

If the ventilator cannot be directly fastened to the roof or to the deck *E* of the room or vessel that has to be ventilated, as shown in Figs. 1 and 2, the bottom ends of the concentric tubes or channels *m n* can be separated and be carried to separate chimneys or channels communicating with the room or building, &c., in question, as shown in the lower part of Fig. 3.

I do not claim, broadly, the combination, with inlet and outlet flues or tubes, of a cowl

applied thereto, for producing a downward current through the inlet-tube and an upward current through the outlet-tube; but

What I claim as my invention is—

- 5 1. The combination, with stationary inlet and outlet tubes *m n*—one within the other—of a cowl having a central partition, *t'*, and a cap or crown, *K*, with which said partition is connected, and having on one side of said partition a series of funnels, *r r*, communicating
10 with the inlet-tube *m*, and on the other side a series of inverted funnels, *i i*, communicating with the outlet-tube *n*, substantially as herein described.
- 15 2. The combination, with stationary inlet and outlet tubes *m n*—one within the other—

of a cowl having a central partition, *t'*, and a cap or crown, *K*, with which said partition is connected, and having on one side of said partition a series of funnels, *r r*, communicating
20 with the inlet-tube *m*, and on the other side a series of inverted funnels, *i i*, communicating with the outlet-tube *n*, and a mantle, *C*, inclosing said funnels, open at the edges of the partition *t'*, and communicating with an opening,
25 *l*, provided in the cap or crown *K* on the same side of the partition *t'*, substantially as herein described.

CONRAD MÜLLER.

Witnesses:

F. ENGEL,
F. CLAIRMONT.