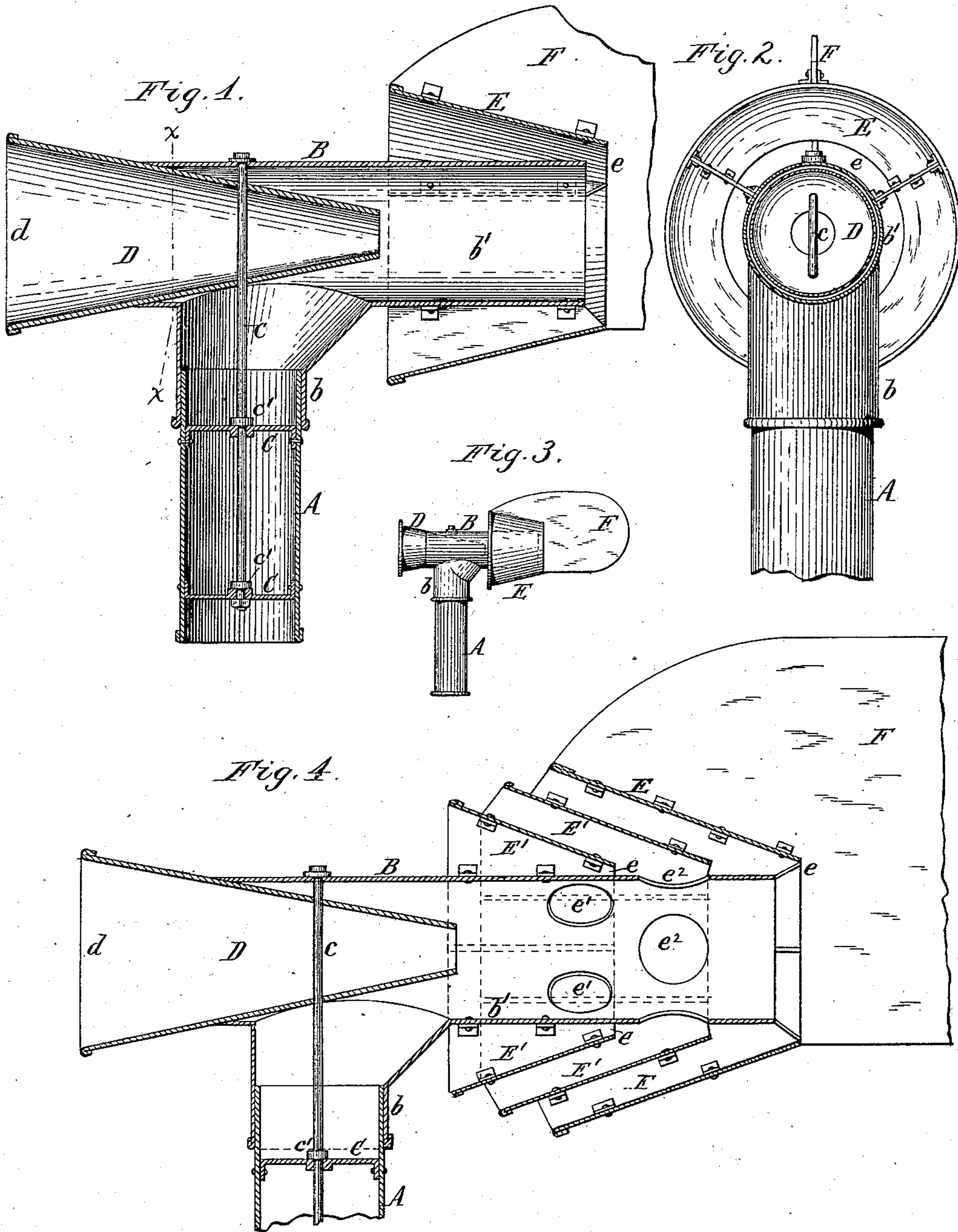


(No Model.)

W. E. COOPER.
CHIMNEY COWL.

No. 312,553.

Patented Feb. 17, 1885.



Witnesses:

Geo. C. Pitman.
Thos. L. Popp.

W. E. Cooper. Inventor.

By Wilhelm Boerner.

Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM E. COOPER, OF DUNKIRK, NEW YORK, ASSIGNOR OF ONE-HALF TO
MARSHALL L. HINMAN, OF SAME PLACE.

CHIMNEY-COWL.

SPECIFICATION forming part of Letters Patent No. 312,553, dated February 17, 1885.

Application filed November 23, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. COOPER, of Dunkirk, in the county of Chautauqua and State of New York, have invented new and useful Improvements in Chimney Cowls or Ventilators, of which the following is a specification.

This invention relates to an improvement in that class of chimney cowls or ventilators which are provided with a horizontal tube pivoted to the upper end of the chimney or flue-pipe and adapted to exhaust the air from the chimney or flue-pipe by the air-current flowing through the pivoted horizontal pipe, the latter being provided with a suitable vane, which adjusts the position of the horizontal pipe automatically, so as to present the mouth of the horizontal pipe to the wind.

The object of this invention is to so construct the cowl or ventilator that a persistent upward air-current will be maintained in the chimney or flue, and so that the wind is prevented from being deflected downwardly and reversing the air-current in the flue or chimney.

My invention consists to that end of the improvements in the construction of the cowl or ventilator, which will be hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a sectional elevation of my improved chimney cowl or ventilator provided with a single supplementary exhaust-cone. Fig. 2 represents a vertical sectional elevation in line *x x*, Fig. 1. Fig. 3 is a side elevation of the same on a reduced scale. Fig. 4 is a sectional elevation of my improved cowl provided with several supplementary exhaust-cones.

Like letters of reference refer to like parts in the several figures.

A represents the upper portion of the chimney or flue, and B the elbow-shaped tube pivoted to the upper end of the chimney or flue A, and forming a continuation of the same. The vertical lower portion, *b*, of the elbow-tube B surrounds the upper end of the chimney or flue A, so as to turn on the same, and the elbow-tube B is supported by a vertical spindle, *c*, which turns in bearings or bridge-pieces C, secured in the chimney or flue A,

and which is provided with collars *c'*, which rest on said bearings. The horizontal portion *b'* of the elbow-tube B is arranged for the greater portion of its length on one side of the spindle *c*.

D represents the jet-pipe or cone arranged axially in the windward end of the horizontal portion of the elbow-tube B, and turned with its mouth *d* to the wind. The pipe D is contracted towards its inner end, which latter is located in the portion *b'* of the pipe B beyond its upright portion *b*, so that the air-jet issuing from the inner end of the pipe D can under no circumstances be deflected downward into the chimney or flue A, but must escape through the open lee end of the tube *b'*. The windward end of the latter fits tightly around the tube D, so that no air is admitted at the windward end of the tube *b'*, excepting that which enters through the tube D. The air-jet issuing from the contracted inner end of the tube D toward the open lee end of the tube *b'* exhausts the air from the space surrounding the tube D in the elbow-tube B, and this exhaustion causes the air in the chimney or flue A to flow upward and out at the open lee end of the tube *b'*.

E represents a supplementary exhaust tube or cone, which surrounds the open or lee end of the tube *b'*, and is turned with its wide receiving end toward the wind, while its narrow discharge end forms an annular opening, *e*, which surrounds the discharge end of the pipe *b'*. The annular air-jet, issuing from the contracted discharge end of the tube or cone E, exhausts the air from the tube *b'*, and assists in maintaining a continuous outward current through the lee end of the pipe *b'* and an irreversible upward current through the chimney or flue A. The exhaust-tube E surrounds the discharge end *b'* of the pipe B only on the lee side of the flue A, whereby the wind-pressure on the tube E is utilized for turning the cowl and retaining the same in position with the open end *d* of the air-jet pipe D toward the wind.

As represented in Fig. 4, a number of these supplementary cones or jet-tubes may be arranged around the tube *b'*. In this case the air gathered by the windward cones *E'* *E'*, which are arranged within the cone E, is de-

livered into the tube b' through openings $e' e^2$ in the proper direction to maintain a persistent outward current through the open lee end of the tube b' .

5 F represents a vane, of any suitable construction, secured to the elbow-tube B in such manner as to cause the tube B to turn on the chimney or flue A and present the receiving ends of the jet-tubes to the wind from what-
10 ever direction it may come.

It will be seen that either the tube D or the cone E will cause a continuous ejection or exhaustion of air from the tube b' , and consequently a continuous upward current of air
15 through the chimney or flue A, and that both devices together act cumulatively in maintaining the desired continuous upward current in the chimney or flue, and prevent any reversal of the same.

20 I am aware that a cowl provided with an exhaust-tube enveloping the air-jet tube and discharge-tube is not new; and I do not claim such construction.

I claim—

25 1. The combination, with a vertical chimney or flue, of a rotating cowl composed of a

horizontal discharge-pipe open at its lee end, a horizontal air-jet pipe or cone fitted tightly in the windward end of the discharge-pipe, and a supplementary exhaust pipe or cone
30 surrounding the discharge end of the discharge-pipe only on the lee side of the chimney or flue, whereby the wind-pressure of the exhaust-pipe is utilized for turning the cowl and maintaining it in the proper position, sub-
35 stantially as set forth.

2. The combination, with a vertical chimney or flue, of a horizontal discharge-pipe open at its lee end and provided with open-
40 ings $e' e^2$, a horizontal air-jet pipe or cone fitted tightly in the windward end of the discharge-pipe, and a series of supplementary exhaust pipes or cones surrounding the discharge end of the discharge-pipe and communicating with the latter by said openings,
45 substantially as set forth.

Witness my hand this 19th day of November, 1883.

WM. E. COOPER.

Witnesses:

C. D. MURRAY,
H. A. COOPER.