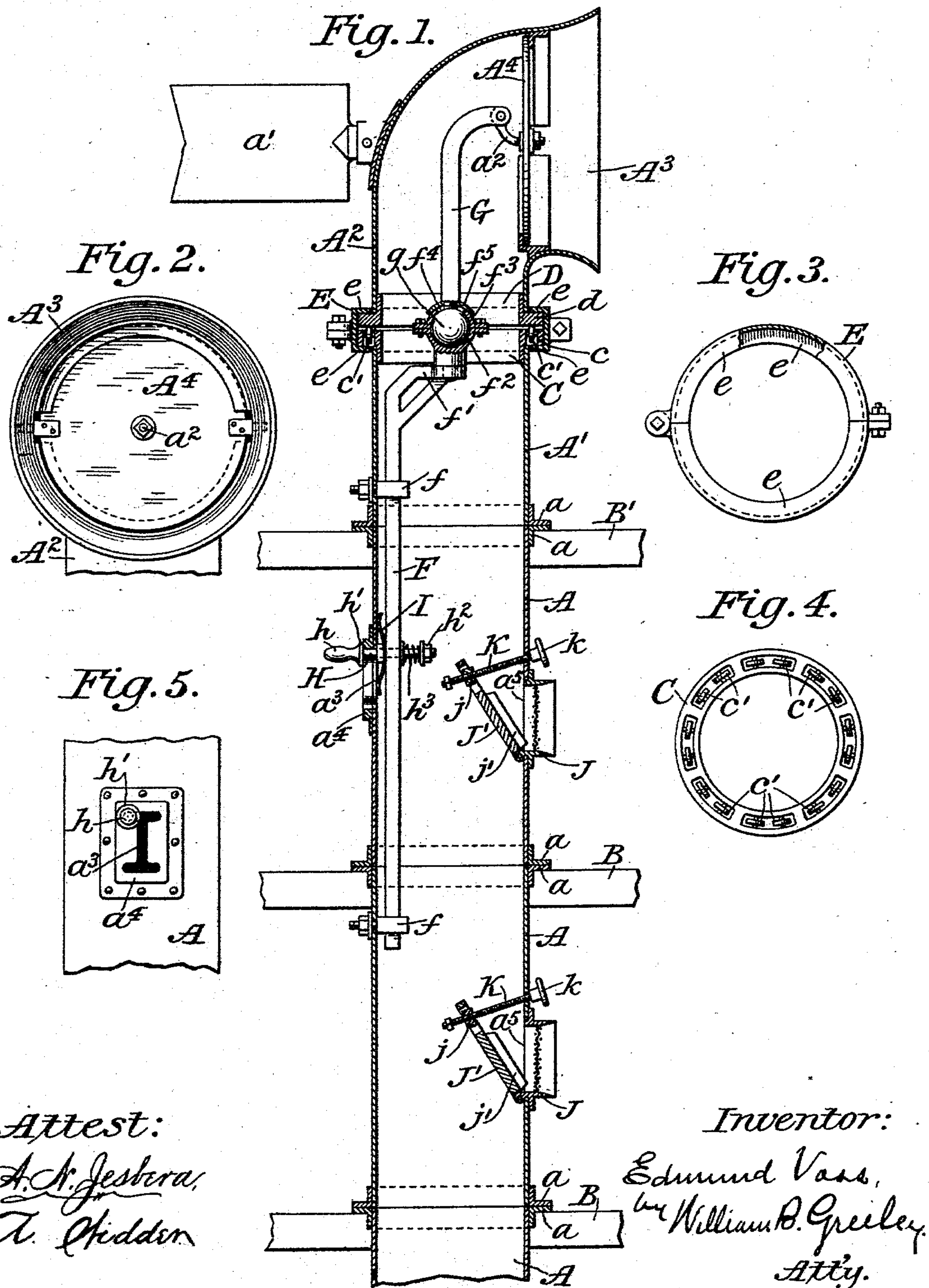


(No Model.)

E. VOSS.  
VENTILATOR.

No. 515,562.

Patented Feb. 27, 1894.





# UNITED STATES PATENT OFFICE.

EDMUND VOSS, OF NEW YORK, N. Y.

## VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 515,562, dated February 27, 1894.

Application filed November 23, 1893. Serial No. 491,764. (No model.)

*To all whom it may concern:*

Be it known that I, EDMUND VOSS, of the city, county, and State of New York, have invented certain new and useful Improvements in Ventilators; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

This invention relates particularly to the construction of ventilating devices which are intended to supply fresh air from the top of a building to the several stories thereof.

The object is to produce a ventilator for the purpose described which can be applied readily to any building, to provide for the regulation of the supply of fresh air to each floor as may be desired, to enable the mouth of the ventilator above the roof to be closed more or less as may be required without interfering with the free rotation of the upper portion of the ventilator upon a vertical axis and without requiring any person to go upon the roof, and generally to improve the construction.

In the accompanying drawings Figure 1 represents a vertical, central section of a ventilator embodying my improvements, the roof and two of the floors of a building being indicated to illustrate more clearly the application of the ventilator to a building. Fig. 2 is a view in elevation of the mouth of the ventilator. Fig. 3 is a detail plan view, partly broken out, of the ring which holds the rotatable section of the shaft on its seat. Fig. 4 is a detail plan view of the bearing for said rotatable section. Fig. 5 is a detail in elevation of a portion of the devices for holding the swinging door of the shaft in position.

The shaft of the ventilator is preferably composed of a series of sections A, A, of a tube or pipe of sufficient diameter to meet the requirements of its use. Each section has a flange *a* secured at each end thereof whereby the several sections may be secured together and may be properly supported by the floors B, B, and the roof B' of the build-

ing. Each section is preferably of a length corresponding to the height of the story of the building in which it is placed so that the shaft may be put in place after the building has been completed or may be removed when necessary, without requiring the building to be injured other than by the cutting of the necessary holes through the floors and roof. The topmost section A' of the shaft may be of any suitable length according to the distance which it is desired to have the mouth of the ventilator above the roof and means are provided for supporting upon its upper end the rotatable section A<sup>2</sup> which is so bent or so constructed as to have a lateral mouth or opening A<sup>3</sup>. Within the upper end of the section A' I secure a sleeve C having a horizontal flange *c* in which are supported suitable anti-friction wheels or rollers *c'*. The rotatable section A<sup>2</sup> has also secured within its lower end a sleeve D which has a horizontal flange *d* to rest upon the rollers *c'*, *c'*. To retain the rotatable section A<sup>2</sup> upon its seat I employ a two-part ring E having inwardly turned flanges *e*, *e*, which overlap the flanges *c* and *d* of the rings C and D, thereby holding the top section A<sup>2</sup> in place while permitting it to rotate freely about its vertical axis. The section A<sup>2</sup> is preferably provided with a fin or vane *a'* which serves to hold the top section with its mouth always toward the wind.

It is desirable to provide means whereby the mouth of the ventilator may be closed in part or wholly when the wind is too strong and for that purpose I mount a valve or door A<sup>4</sup> upon horizontal pintles within the mouth A<sup>3</sup> of the section A<sup>2</sup> and I further provide means whereby this valve or door may be adjusted from a point beneath the roof of the building, the means being so constructed that there is no interference with the free rotation of the top section about its axis. A rod F is arranged to slide in suitable guides *f*, *f*, within the shaft of the ventilator and at its upper end has a bracket arm *f'* to which, in line with the axis of the shaft, is fixed a hemispherical cup *f*<sup>2</sup>. An arm *a*<sup>2</sup> is fixed to the valve or door



A<sup>4</sup> and to its free end is pivoted a link G having at its lower end a ball *g* which is seated within the cup *f*<sup>2</sup>. A cap *f*<sup>3</sup>, having an aperture *f*<sup>4</sup> to permit a certain amount of movement of the link G, is secured to the cup *f*<sup>2</sup> and serves to hold the ball *g* to its seat while permitting free movement thereof. A curved flange *f*<sup>5</sup> may be secured to the link G for the purpose of covering the aperture *f*<sup>4</sup> so that rain and snow may not find their way between the ball and its seat. The swivel joint which is thus formed between the rod F and the link G permits the rod to be moved up or down for the purpose of swinging the door A<sup>4</sup> upon its bearings without in any degree interfering with the free rotation of the top section A<sup>2</sup> about its vertical axis. For the purpose of enabling the rod F to be moved I cut a slot *a*<sup>3</sup> through the side of the shaft A at a convenient point and fix to the outside of the shaft a correspondingly slotted friction plate *a*<sup>4</sup>. A rod H having a suitable handle *h* with a friction plate *h*<sup>1</sup> to bear upon the friction plate *a*<sup>4</sup> is passed through the slot *a*<sup>3</sup> and through the rod F. The inner end of the rod H may be screw threaded and provided with a nut *h*<sup>2</sup> between which and the rod F may be interposed a spring *h*<sup>3</sup>, whereby the pressure of the plate *h*<sup>1</sup> against the plate *a*<sup>4</sup> may be adjusted as required. A flat spring I may also be interposed between the rod F and the side of the shaft to bear upon the latter and increase the friction by which the rod with the link G and the door A<sup>4</sup> is held in any desired position.

In addition to the means for regulating the admission of air to the shaft according to the strength of the wind, I have also provided means whereby the admission of air to each story may be regulated as desired. For this purpose I fix in each opening *a*<sup>5</sup> through which the air is permitted to pass from the shaft to the respective story a frame J to the lower edge of which is hinged a door J'. Any convenient means may be employed for holding the door in any desired position. I have represented each door as having a swivel nut *i* which is engaged by a screw threaded rod K. The latter passes through the wall of the shaft and has on its outer end a hand wheel *k* which bears against the wall of the shaft and by which the rod may be turned to adjust the position of the door as may be required. As the door is hinged at its bottom and opens inwardly a portion of the current of air which descends through the shaft will be deflected through the aperture *a*<sup>5</sup>. Wings *j*' may be fixed to the door J' at each side thereof for the purpose of more effectually directing the current of air outward through the aperture *a*<sup>5</sup>.

The mode of operation of my improved ven-

tilator will be apparent from the foregoing statement of the features of construction without further description.

I claim as my invention—

1. In a ventilator, the combination of a fixed shaft, a top section rotatably mounted thereon, a door adapted to close the mouth of said top section, a rod mounted to move in guides within the shaft, means to move said rod and a connection between said door and said rod having a swivel joint, substantially as shown and described.

2. In a ventilator, the combination of a fixed shaft, a top section rotatably mounted thereon, a door adapted to close the mouth of said top section, a rod mounted to move in guides within the shaft and having a bracket arm, a socket fixed to said arm in line with the axis of the shaft, and a link connected to said door and having a ball seated in said socket, substantially as shown and described.

3. In a ventilator, the combination of a fixed shaft, a top section rotatably mounted thereon, a door adapted to close the mouth of said top section, a rod mounted to move in guides within the shaft, a connection between said door and said rod having a swivel joint, and a handled rod projecting through a slot in the wall of said shaft and having a friction bearing thereon whereby the door may be held in any desired position, substantially as shown and described.

4. In a ventilator, the combination of a fixed shaft, a sleeve secured in the upper end thereof and having a flange, anti-friction rolls supported by said flange, a rotatable top section, a sleeve secured within the lower end of said top section, and having a flange to rest upon said rolls, and a two-part ring having lips to overlap said flanges and to hold the top section upon its seat, substantially as shown and described.

5. In a ventilator, the combination of a fixed shaft having an aperture through which the air may be delivered from said shaft, a rotatable section mounted upon the top of said shaft and having a lateral mouth and a vane to keep said mouth toward the wind, a door hinged to the bottom of said aperture and means to support said door in position whereby a portion of the descending current in said shaft may be deflected outwardly through said aperture, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDMUND VOSS.

Witnesses:

WILLIAM DEUTSCH,  
EMIL VOSS.