H. A. SCHMELZ.

VENTILATOR.

APPLICATION FILED APR. 6, 1914.

1,167,120. Patented Jan. 4, 1916.

Fig. 1.

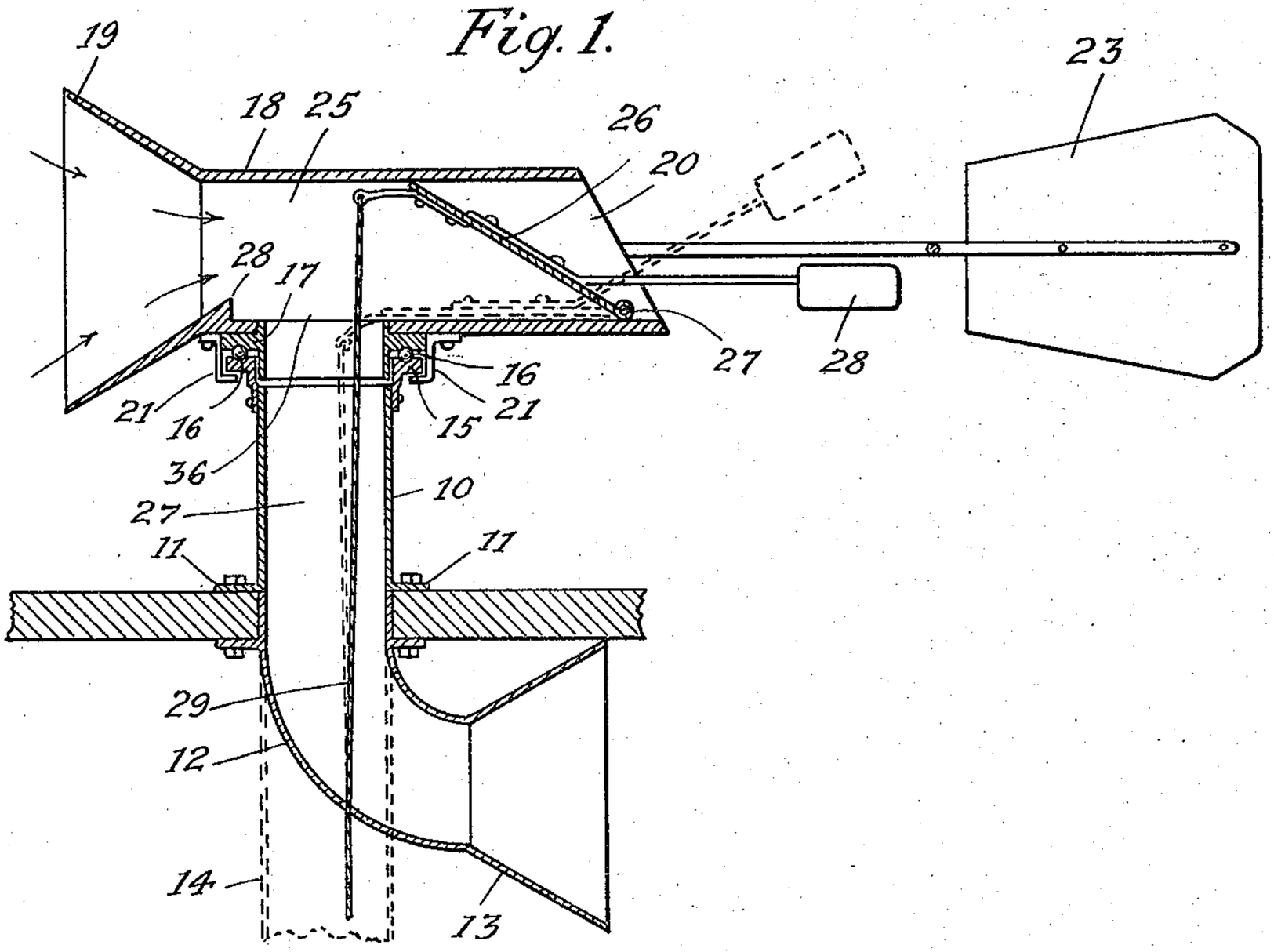


Fig. 2.

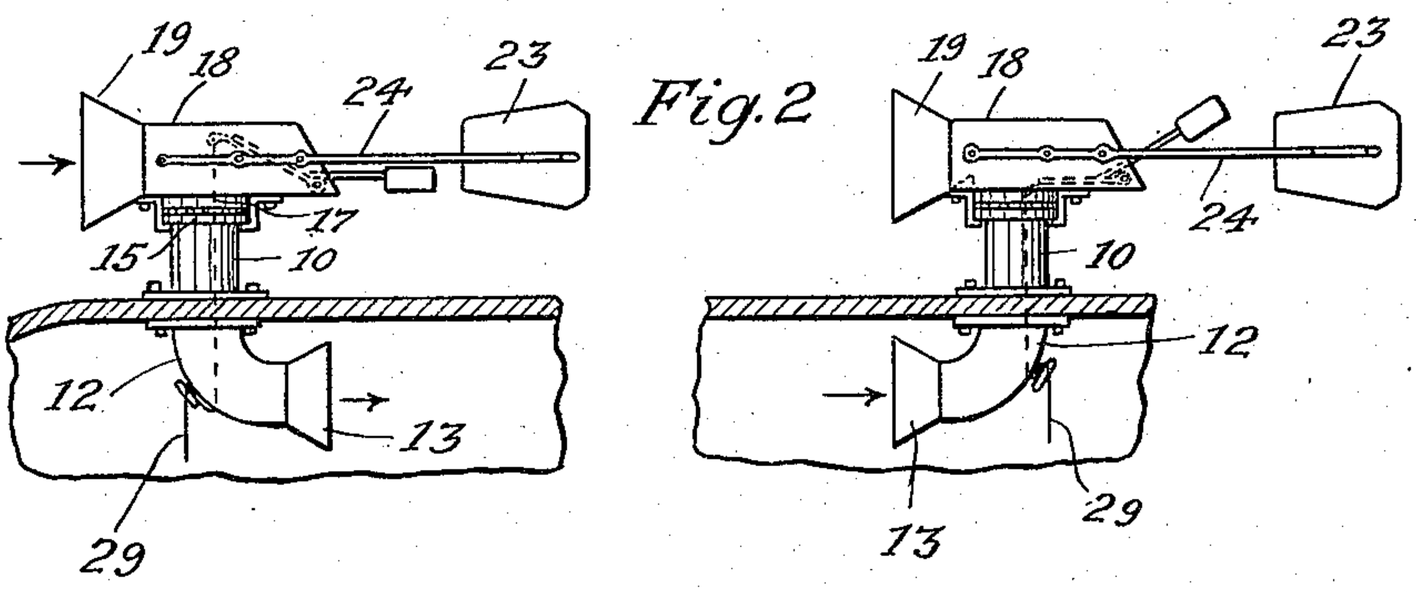
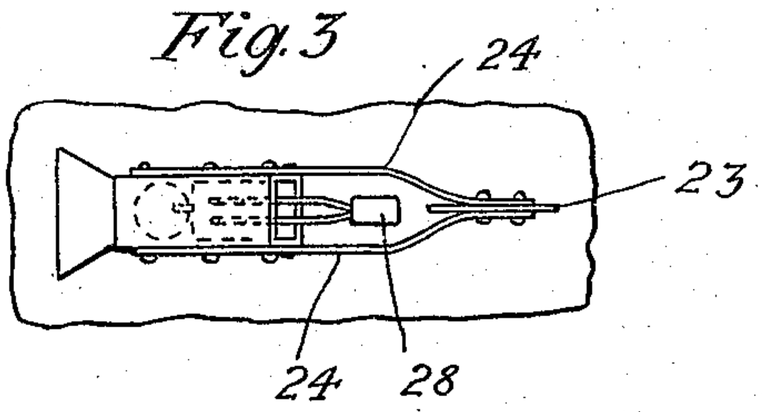


Fig. 3



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UNITED STATES PATENT OFFICE.

HENRY A. SCHMELZ, OF PERHAM, MINNESOTA.

VENTILATOR.

1,167,120. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed April 6, 1914. Serial No. 829,814.

To all whom it may concern:

Be it known that I, HENRY A. SCHMELZ, a citizen of the United States, residing at Perham, in the county of Ottertail and State of Minnesota, have invented certain new and useful Improvements in Ventilators, of which the following is a specification.

My invention relates to ventilators, and has for its object to provide a device which, when subjected to a current of air, as the wind or the currents caused by the movement of vehicles, such as a street-car or train, will operate either to force fresh air into the compartment or building to which the ventilator is attached or to withdraw the foul air from said building.

It is the object of my invention to provide a device of this character having a trumpet-like extension and means for positioning said extension so that the same is turned toward the direction of the current, together with controllable means whereby the current of air which is forced into the apparatus through said trumpet may either be caused to enter the building directly or to pass through the apparatus and thereby withdraw air from the interior of the building.

The full objects and advantages of my invention will appear in connection with the detailed description thereof and are particularly pointed out in the claims.

In the drawings, illustrating the application of my invention in one form,—Figure 1 is a sectional elevation showing the apparatus in operative position. Fig. 2 is an illustration showing a pair of the devices mounted, as, for example, on a car, one operating to force air into the car and the other to withdraw air from the car. Fig. 3 is a top plan view of the device.

My device comprises a tubular standard 10 having members 11 by means of which the same may be secured to the wall or roof of a building or car and a tubular extension 12 through said wall which may be connected directly with a funnel 13 at the inside of the building or may be extended as indicated in dotted lines at 14 to any desired point.

Upon the end of tubular standard 10 and surrounding the open end thereof, I secure a bearing ring 15.

Resting upon ball bearings 16 in a groove in the bearing ring 15 is a ring 17 which supports a tubular body member 18 having an open-mouthed funnel 19. The tubular member 18 is often also open at its other end 20. It will be seen that this member is mounted to swing about a vertical axis on the ball bearings 16. It is held in position by keepers 21 secured thereto and overlaps the ring 15. A vane 23 secured to the tubular member 18, preferably by means of wires 24 at each side of vane 23, will, when the member is exposed to a wind or current of air, cause the funnel 19 to be directed into such wind so that the air will be compressed within the passageway 25 in member 18 and tend to flow through the same.

A closure 26 is pivoted at 27 in member 18 and normally held in position to close the passageway 25 by means of a weight 28. The passageway opens directly, as indicated at 26, into passageway 27 within tubular standard 10 which communicates with extension 12 or 14. When therefore the closure 26 is in normal operative position, as indicated at Fig. 1, the air which is compressed within the passageway 25 is caused to flow downwardly through member 12 to be delivered within the room or car. When a wind of any strength is blowing, or when the apparatus is caused to move through the air at a considerable rate of speed, as upon the roof of a car, the compression of the current by funnel 19 will generate a sufficient draft to force the air rapidly and a long distance through extension 12 or 14.

A projecting lip 28 is provided which extends upwardly into passageway 25 in front of the opening 26 into passageway 27. When it is desired to ventilate by withdrawing the air by suction the closure 26 is drawn down into the position indicated in dotted lines by means of cord 29. Passageway 25 is thereby opened so that the current of air compressed therein will move freely through the same and discharge through opening 20. The movement of this current of air over the mouth 26 extending into passageway 27 will have the effect of dragging a certain amount of the air with which this current comes in frictional contact at the opening 26 through passageway 27 and from the interior of the room or car. This will operate to draw the air from the interior.

This ventilating apparatus is particularly desirable for sleeping cars, where, as indicated in Fig. 2, one member may be used for drawing the air out of the car and the other member for introducing fresh air directly

into the car. The ventilating devices may be made small so that an independent air introducing device may be applied to each berth of the car and larger withdrawing devices be used for the entire body of air in the car. Each passenger in each individual berth will therefore be supplied with pure air which may of course be introduced and spread in such manner as to avoid drafts.

The further great advantage of this ventilating device for dwellings will be apparent. The devices can be placed on the highest portions of the dwelling and the extensions 12 or 14 run into the sleeping chambers and fresh air be introduced and foul air removed by the action of the wind, thus preventing the necessity of opening up the storm windows during cold and especially windy weather.

The device can be constructed very cheaply, and easily applied to any building or car without modifying the construction thereof in any particular.

I claim:

1. A ventilating device comprising a hollow vertical standard secured to the roof of a building or car, said standard providing a single passageway extending through said roof, a conductor connecting said passageway with any part of the interior, an open-mouthed tubular member rotatably mounted upon said standard having the interior thereof in full communication with said passageway and having a funnel-shaped mouth, a vane for causing said funnel mouth to face the wind, and means within the tubular member controllable within the building or car to cause the current of air compressed in said funnel to deliver fresh air through said passageway into the building or car or to withdraw foul air through said same passageway from the building or car.

2. A ventilating device comprising a hollow vertical standard secured to the roof of a building or car, said standard providing a single passageway extending through said roof, a conductor connecting said passageway with any part of the interior, a tubular member of square cross section rotatably mounted upon said standard having the interior thereof in full communication with said passageway and having a funnel-shaped mouth and a discharge opening, a vane for causing said mouth to face the wind, a damper hinged to the bottom of said tubular member near the open discharge end, a weight attached to said damper to hold said damper in an oblique position normally closing the discharge end of said tube, an arm on said damper extending beyond the edge of said damper to the central axis of said standard, and a cord attached to said arm passing within said standard and through said conductor into the building or car for opening said damper.

3. A ventilating device comprising a hollow vertical standard secured to the roof of a building or car, said standard providing a single passageway extending through said roof, a conductor connecting said passageway with any part of the interior, an open-mouthed tubular member rotatably mounted upon said standard having the interior thereof in full communication with said passageway and having a funnel-shaped mouth, a vane for causing said funnel mouth to face the wind, and a lip on said funnel-shaped mouth adjacent the opening to said passageway for deflecting the air current upward to cause a vacuum and produce suction in said passageway.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY A. SCHMELZ.

Witnesses:
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A. G. SCHWARZROCH.