

Sept. 8, 1925.

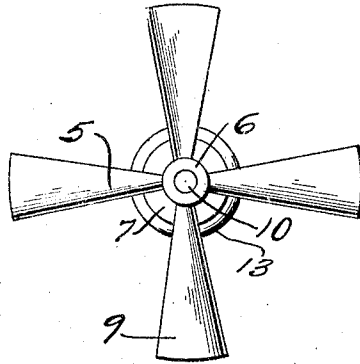
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J. SOMMER

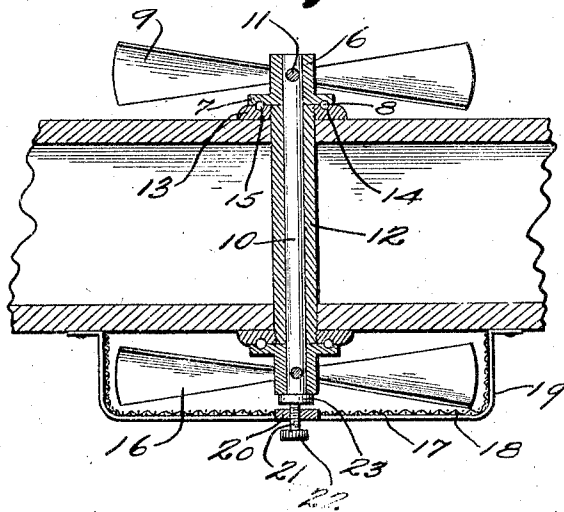
VENTILATING FAN

Filed Jan. 3, 1924

*Fig. 1.*



*Fig. 2.*



Inventor

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# UNITED STATES PATENT OFFICE.

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## VENTILATING FAN.

Application filed January 3, 1924. Serial No. 684,180.

*To all whom it may concern:*

Be it known that I, JOSEPH SOMMER, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in a Ventilating Fan, of which the following is a specification.

This invention relates to improvements in ventilating fans, and more particularly to that type of fan which is rotated by movement of the air.

An important object of the invention is to provide a ventilating fan which may be mounted upon railway cars or the like, and driven by movement of the air caused by movement of the said car.

A further object of the invention is to provide a device of this character which will cause circulation of the air within railway coaches and the like.

A further object of the invention is to provide a device of this character which is comparatively simple, yet durable and efficient for the purpose intended.

Other objects and advantages of this invention will be apparent during the course of the following description.

In the accompanying drawing forming a part of this specification and in which like numerals are employed to designate like parts throughout the same:

Figure 1 is a top plan view of the device, and

Figure 2 is a vertical sectional view taken through the center thereof, and showing the device mounted upon a railway car roof or the like.

In the drawing, wherein for the purpose of illustration is shown the preferred embodiment of my invention, the numeral 5 generally denotes the fan or wind wheel which is positioned above the roof of the car, and comprising a hub 6 which has a collar 7 formed integral therewith, the said collar having a ball race 8 formed in the lower face thereof. The hub 6 carries a plurality of blades 9 which may be secured thereto by means of studs or any suitable means and inclined at a suitable angle. The fan 5 is rigidly secured to a vertical shaft 10 by means of a pin 11 thereby causing rotation of the shaft when the same is actuated by the wind.

I provide a tubular bushing 12 which fits firmly over the shaft 10 and penetrates the

upper and lower portion of the railway car roof, the extremities having external threads formed thereon and extending beyond the roof section. An internally threaded flange 13 has a ball race 14 formed in the upper space thereof and is adapted to co-act with the ball race 8 formed in the collar 7. The flange 13 is threadedly connected to the tubular bushing 12 and is adapted to retain same in position. A plurality of ball bearings 15 are positioned within the races 8 and 14 and act as bearings for the revolving collar 7.

The lower extremity of the shaft 10 carries a fan 16 similar in construction to the aforementioned fan 5 and connected thereto as previously described for fan 5. In order to prevent the danger of persons or objects coming in contact with the revolving blades of the inner revolving fan 16, a wire guard 17 is secured to the roof of the car and covers the fan. The wire guard 17 is comprised of a screen 18 and cross braces 19 which support the screen and strengthen the structure thereof. The central portion of the guard 17 has a disk 20 secured therein, the disk being internally threaded and adapted to receive the stop bolt 21 which has a knurled head 22 formed on the lower portion thereof and a disk 23 secured to the upper extremity, the disk being preferably constructed of leather or like material and adapted to prevent rotation of the fan when it is so desired.

In use the device may be mounted upon the roof or sides of a railway car or the like, the outside fan 5 being rotated by the wind or moving current of air and causes rotation of the shaft 10 which carries the inside fan 16 and rotates same within the guard 17. Obviously the device will add greatly to the comfort of the passengers by freely circulating the air through the coaches and cooling the atmosphere therein. The rotation of the fan is controlled by the hand screw 22 and if desired this hand screw may be forced tightly against the fan shaft and prevent rotation thereof.

It is to be understood that the form of my invention herewith shown and described is to be taken as the preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention, or the scope of the subjoined claim.

Having thus described my invention I claim—

5 A ventilating fan of the character described comprising a shaft extending through the roof or sides of a vehicle, a tubular bushing surrounding the shaft, a pair of flanges threadedly connected to the tubular bushing and adapted to retain the same in position, a pair of fan wheels com-  
10 prising hubs having a collar formed on the extremity thereof, ball races formed in the collars and adapted to co-act with similar

ball races formed in the flanges, ball bearings positioned within the races, a plurality of fan blades secured to the hubs, means for  
15 securing the hubs to the extremities of the shaft, a screen guard positioned about the interior fan wheel, a thumb screw positioned within the center of the screen guard and adapted to control movement of  
20 the rotating fan.

In testimony whereof, I have affixed my signature.

JOSEPH SOMMER.