(No Model.) 2 Sheets—Sheet 1.

W. ROBINSON & M. S. RAHER.

CAR VENTILATING WIND WHEEL.

No. 589,195. Patented Aug. 31, 1897.

Fig. 1.

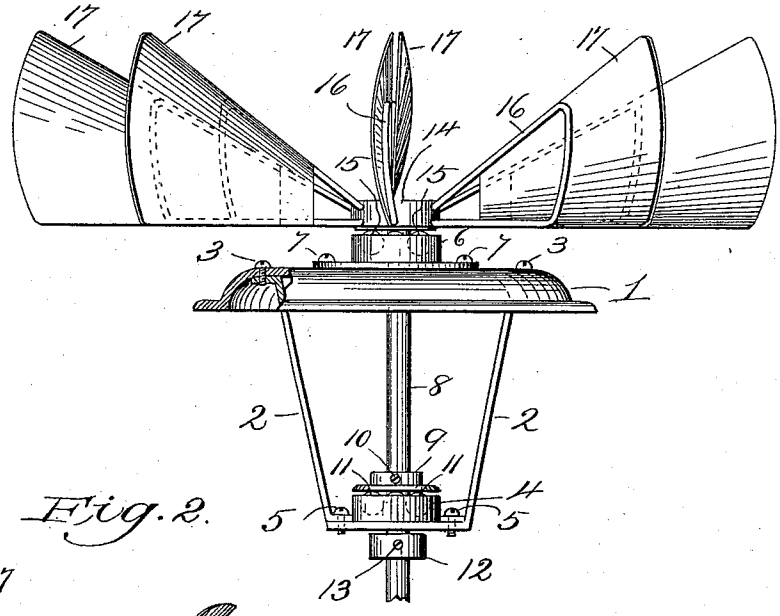


Fig. 2.

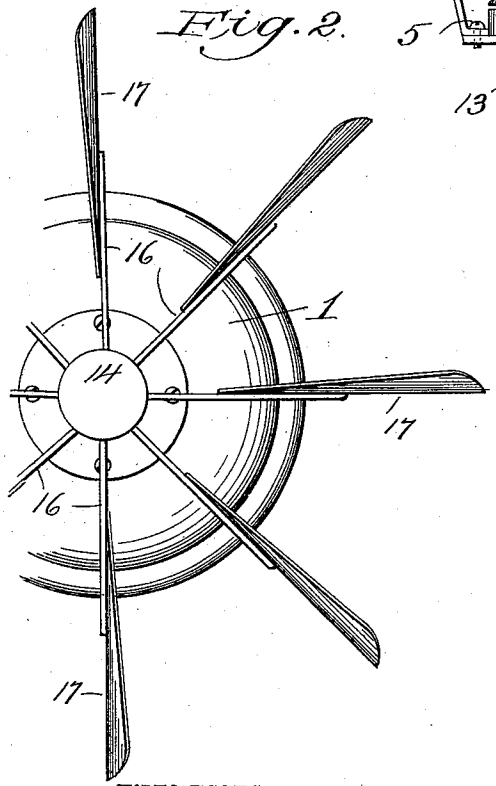
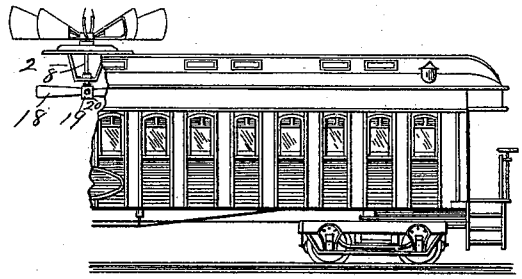


Fig. 3.



WITNESSES

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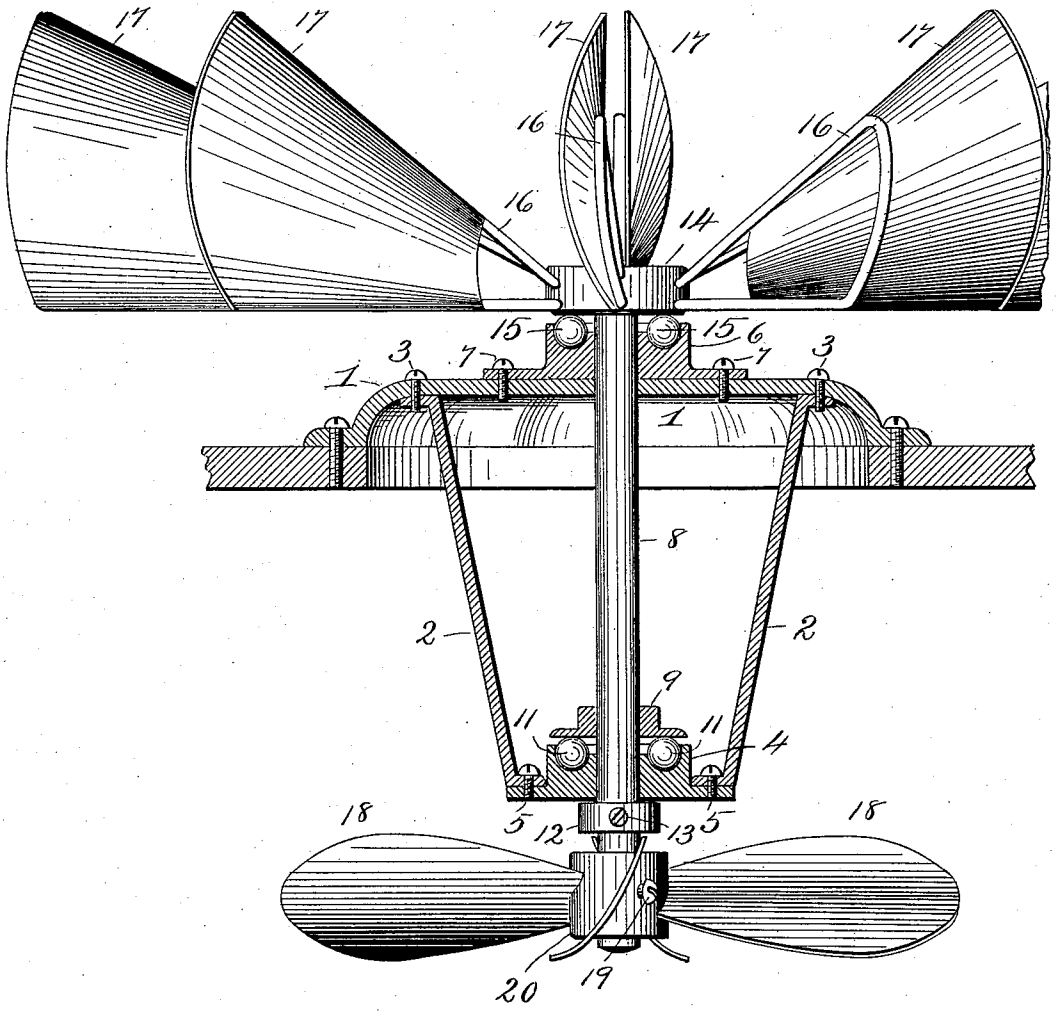
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Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM ROBINSON AND MICHAEL S. RAHER, OF DUBOIS, PENNSYLVANIA.

CAR-VENTILATING WIND-WHEEL.

SPECIFICATION forming part of Letters Patent No. 589,195, dated August 31, 1897.

Application filed October 15, 1896. Serial No. 608,970. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM ROBINSON and MICHAEL S. RAHER, citizens of the United States, residing at Dubois, in the county of Clearfield and State of Pennsylvania, have invented certain new and useful Improvements in Wind-Wheels; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to that class of car-ventilators consisting of an outer wind-wheel, an inner fan, and a vertical spindle connecting the two.

Our object is to provide a device of the class described which will be adapted to run smoothly and easily and which may be adjusted, taken apart, or assembled with rapidity and ease.

The invention consists of certain improved features and novel combinations of parts appearing more fully hereinafter.

In the accompanying drawings, Figure 1 is a side elevation of our improved device; Fig. 2, a top view; Fig. 3, a view showing the same applied to a passenger-coach and adapted to operate a fan in the latter. Fig. 4 is a similar view, on an enlarged scale, but showing certain parts in section.

Although our improved device is adapted for use in operating any suitable machinery, yet in the present instance we shall describe it as being carried by a passenger-coach and operating a ventilating-fan in the latter.

The numeral 1 designates a concaved ornamental plate which is adapted to be secured to the ceiling of the car.

At 2 are shown depending arms which are connected to the plate by bolts 3, which pass through feet or projections of said arms. There is a lower ball-cup 4, to which the lower ends of the arms are connected by the bolts 5, said lower ends being formed into feet, as before. Superimposed on the plate 1 is a ball-cup 6, which is connected to said plate by bolt 7. The numeral 8 designates a shaft or spindle which extends vertically through the ball-cups. Immediately above ball-cup 4 the shaft carries a bearing-plate 9, which is adjustable by a clamping-screw 10. In the ball-cup 4 there are the balls 11, on which the plate 9 rests. There is a lower collar 12, having a clamping-screw 13, so as to make it adjustable, said collar being located below the ball-cup 4.

The numeral 14 designates a head which is located on the upper end of shaft 8, and there are balls 15, located in cup 6 and on which the head 14 rests. Connected to said head are a series of backing-frames 16, which are smallest at their point of junction with the head and extend radially from the latter, being broadest at their outer ends. We employ a series of curved paddles or vanes 17, which are secured to the backing-frames.

The lower end of the shaft 8 projects down into the interior of the car and carries a series of adjustable fans 18, 19, and 20.

Owing to the movement of the balls the device is adapted to operate easily, and it will be seen that owing to the position of the plate 9 and the collar 12 the shaft or spindle cannot jump vertically, which would otherwise occur when the device was in rapid rotation if means were not employed to prevent it. The fan, the collar, and the plate can all be removed or adjusted, as desired, and it will be observed that the various parts of the device are connected together in such a manner that they can be readily detached, and hence if any part becomes broken or damaged it can be removed or replaced.

When the train is in motion, the wind strikes the vanes or paddles which are located above the car and turns the shaft, which, owing to the fact that it is ball-bearing, runs very easily, and the fans are set in motion, thereby insuring a thorough ventilation of the car.

Of course it is obvious that our improved wind-wheel could be used in many other connections which are not spoken of in the present application, and, further than this, there are many slight changes of construction that could be resorted to without affecting the efficiency of the device, and hence we consider ourselves entitled to all such variations as properly come within the spirit and scope of the invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The herein-described ventilator comprising

an upper plate secured to the top of the car, a ball-cup secured to said plate, arms connected to the plate and depending therefrom, a ball-cup secured to the lower ends of the arms, a vertical spindle passing through the two ball-cups, and having a head at its upper end, balls interposed between the said head and the upper ball-cup, wind-wheel blades connected to said head and extending laterally, a plate adjustable on the spindle and removable therefrom, being located above the lower ball-cup, balls interposed between said plate and the cup, a collar adjustable on the spindle and removable therefrom, which is located below the said lower ball-cup, and a laterally-disposed fan detachably connected to the lower end of the spindle.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

WILLIAM ROBINSON.
MICHAEL S. RAHER.

Witnesses:
HERBERT A. MOORE,
DAVID S. KNAU.