

A. W. WOODWARD.

COMBINED WIND WHEEL AND FAN FOR RAILROAD CARS.
No. 170,215.

Patented Nov. 23, 1875.

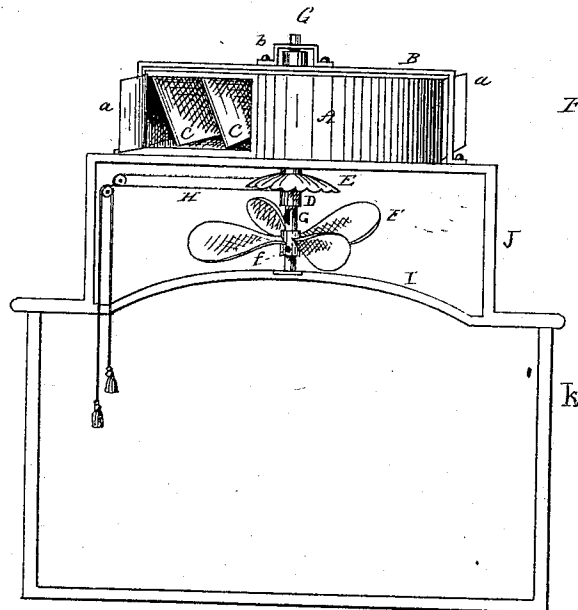


Fig. 1

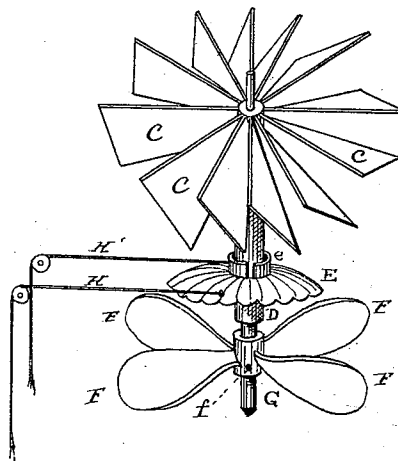


Fig. 2

WITNESSES.

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AMBROSE W. WOODWARD, OF LANCASTER, PENNSYLVANIA.

IMPROVEMENT IN COMBINED WIND-WHEELS AND FANS FOR RAILROAD-CARS.

Specification forming part of Letters Patent No. **170,215**, dated November 23, 1875; application filed August 26, 1875.

To all whom it may concern:

Be it known that I, AMBROSE W. WOODWARD, of the city of Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain Improvements in a Combined Wind-Wheel and Fan for Railroad-Cars, of which the following is a specification:

The nature of this invention consists in the arrangement of a rapidly-revolving fan near each end of a car, driven by a wind-wheel placed outside, within an adjustable case, to admit the air-currents for propelling the wheel and driving the fan, for the purpose of stirring or agitating the stagnant air within the cars, and promote the action of the side ventilators usually employed in passenger-cars on railroads.

The accompanying drawing, with the letters of reference marked thereon, together with a brief description, will enable those skilled in the art to make and apply the same, and in which—

Figure 1 shows a vertical view or section of a passenger-car with the appliances in place; Fig. 2, the central shaft of the wheel and fan, shown detached, with its appliances for adjusting the case.

The wind-wheel revolves within a case secured by a cross-keeper, B, centrally surmounted by a brace, b, forming the upper bearing of the vertical shaft G, to which the wind-wheel and the fan are secured. The lower part or step of this shaft rests centrally on a curved cross-piece, I, that spans from one side of the upper draft-chamber to the other. This casing around the wind-wheel has an open space on opposite sides, and a flared mouth to arrest and direct the currents of air to the wings C of the wheel through said openings. The case is provided with a sleeve to fit around the shaft G, and is connected with a short slotted sleeve, e, on a disk, E, under the roof, so as to be rotated by the action of said disk, for which purpose the cords H H' are used, secured to it on opposite sides. These cords can be provided with loops to fasten to a button on the side of the car, to hold the

same in its adjustment. There is a stationary shield, A, against which the flared ends a of the case can be drawn to close the opening in the case, or partially so, as the case may be. Pulling one cord will rotate the case to the right; the other cord pulled will turn it to the left, either opening or closing the aperture more or less.

The wind-wheel may have twelve or more oblique wings, c, so as to catch the current of air produced by the motion of the cars. Being centered and well balanced, the motion is imparted to the fan with its four obovate inclined fans or wings F on a hub made adjustable by a set-screw, f. Those are kept in a rotary motion, and it is believed will agitate and stir the air within the cars effectually, and promote the comfort of the traveling public at a trifling expense in applying the device, actuated by the motion of the cars, without cost for motive power to propel the same.

I am aware that numerous devices have been employed for ventilating purposes on railroad-cars, including wind-wheels, &c., as in Patent No. 98,201, in which a wind-wheel on a vertical shaft is claimed, in combination with gear and a horizontal shaft for an incased fan or blower; nor do I claim an adjustable shield apart from my adjustable case; but I am not aware of any arranged, combined, and operated substantially as herein set forth and shown; therefore,

What I claim is—

A wind-wheel having six, eight, or more oblique, wedge-shaped wings, C, within a case, B, which case is made adjustable in its bearings by cords H H' and disk E, and is also provided with flared fixed shields a a, together with a fixed independent check-plate, A, in combination with a fan, F, on a hub, made adjustable by a set-screw, f, on the vertical shaft G of the wind-wheel, the whole arranged and operated as and for the purpose specified.

A. W. WOODWARD.

Witnesses:

W. B. WILEY,
JACOB STAUFFER.