(No Model.)

S. HURST.

CAR VENTILATOR.

No. 263,786. Patented Sept. 5, 1882.

Fig. 1.

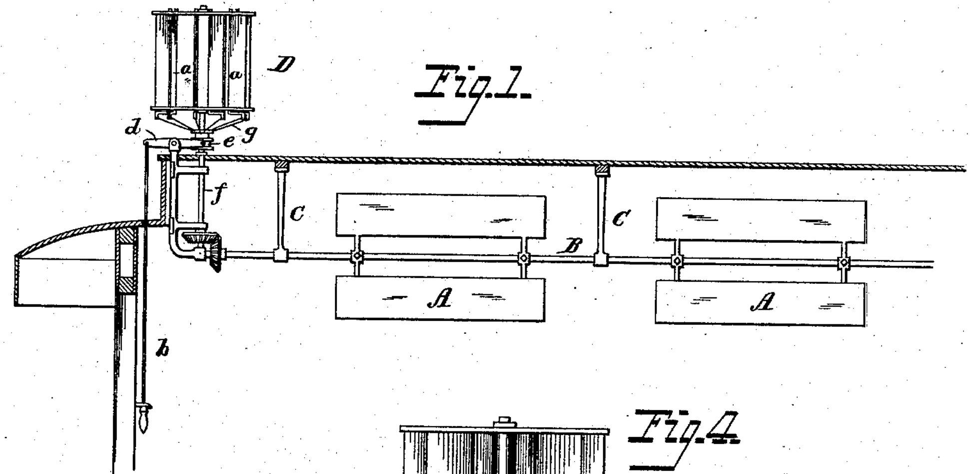


Fig. 4.

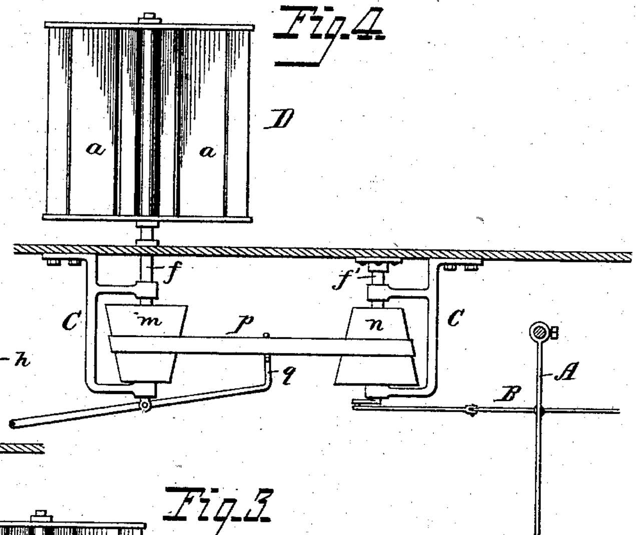


Fig. 2.

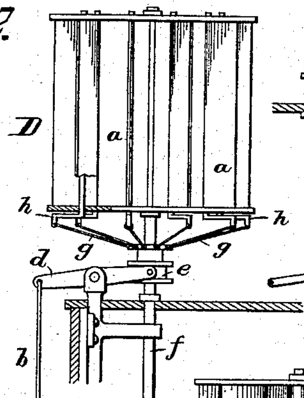
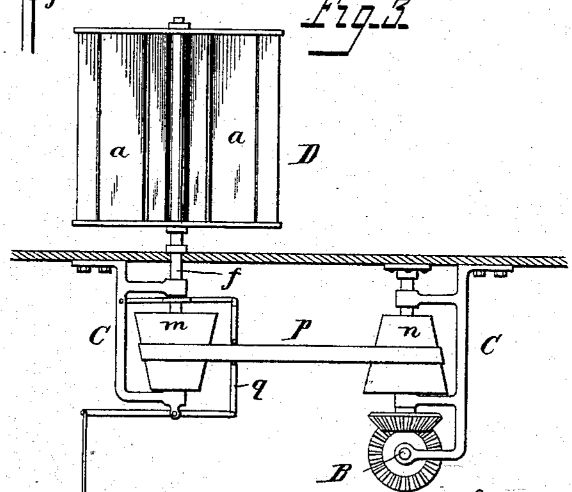


Fig. 3.



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UNITED STATES PATENT OFFICE.

SAMUEL HURST, OF ST. LOUIS, MISSOURI.

CAR-VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 263,786, dated September 5, 1882.

Application filed June 21, 1882. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL HURST, of the city and county of St. Louis, State of Missouri, have invented certain Improvements in Car-Ventilators, of which the following is a specification.

My invention relates to that class of ventilators used for creating currents of air in railway-cars for ventilating and cooling purposes; and it consists of means, fully described hereinafter, whereby the action of the ventilating appliances can be regulated with the greatest nicety.

In the drawings, Figure 1 is a longitudinal vertical section of part of a railway-car illustrating my invention. Fig. 2 is an enlarged view of the mill and blade-adjusting devices. Fig. 3 is a view showing speed-changing devices interposed between the fan-shaft and mill-shaft, and Fig. 4 is a modification.

In ordinary car-ventilating appliances the vanes or fans are driven by a windmill outside of the car, and the speed of the fans varies with that of the mill, so that the revolution of the latter, when the car is traveling at a high speed, will impart too vigorous a motion to the fans, while the latter will not move quickly enough when the car is moving slowly. To overcome these defects I use a windmill having movable vanes and appliances whereby the gear of the windmill-shaft and fan-shaft may be adjusted from within the car to increase or decrease the rapidity of the fan motion.

The fans may be revolving fans, as shown in Fig. 1, or vibrating fans, as shown in Fig. 4. In the former case the fan-blades A are straight or curved and secured to a shaft, B, supported by hangers C from the top of the car. In the latter case the fans are hung from the top and connected to swing together by the shaft or rod B.

The windmill D is of any suitable construction. As shown, it is provided with blades *a*, which may adjust themselves automatically, as is common in various forms of windmills, so that the action of the mill will be substantially uniform, regardless of the rapidity of the air-current; or, in place of having the blades adjustable automatically, they may be adjusted from within the car by a cord, *b*, operating a lever, *d*, which slides a sleeve, *e*, sliding on but revolving with the shaft *f* of the mill, said sleeve being connected by rods *g* to arms *h* on the trunnions of the blades *a*, so that the latter may be set at different angles by raising and lowering the sleeve. By this means, or by the use of automatic appliances for adjusting the blades, the substantial uniform revolution of the mill may be secured. Whatever may be the speed of the mill, it is sometimes desirable to increase or decrease the rate of movement of the fans, for which purpose I combine with the mill-shaft and with the fan-shaft speed-regulating devices whereby to reduce or increase the number of revolutions transmitted from one to the other. For this purpose any of the well-known speeding devices may be employed. For instance, I may use a counter-shaft, *f'*, and reversed cones *m n* upon the shafts *f f'*, with a belt, *p*, and adjusting bar *q*, the movement of which will vary the speed as may be required.

By the use of the apparatus described I am enabled to secure a uniform movement of the fans when required, or to vary the same as may be necessary, thereby effecting a thorough ventilation of the car, excluding the dust, mitigating the heat, and greatly increasing the comfort of the passengers.

I claim—

1. In a car-ventilating device, the combination, with the ventilating-fans, of a windmill outside of the car, provided with adjustable blades and geared to drive the fans, as specified.

2. The combination of the fans, mill having adjustable blades, and blade-adjusting devices *b d e g h*, or their equivalents, as specified.

3. The combination of the mill, fans, connecting appliances, and a speed-adjusting device, as described.

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

SAMUEL HURST.

Witnesses:

CHARLES E. FOSTER,

WILLIAM PAXTON.