(No Model.)

W. J. TULLY.

CAR VENTILATING MECHANISM.

No. 570,353. Patented Oct. 27, 1896.

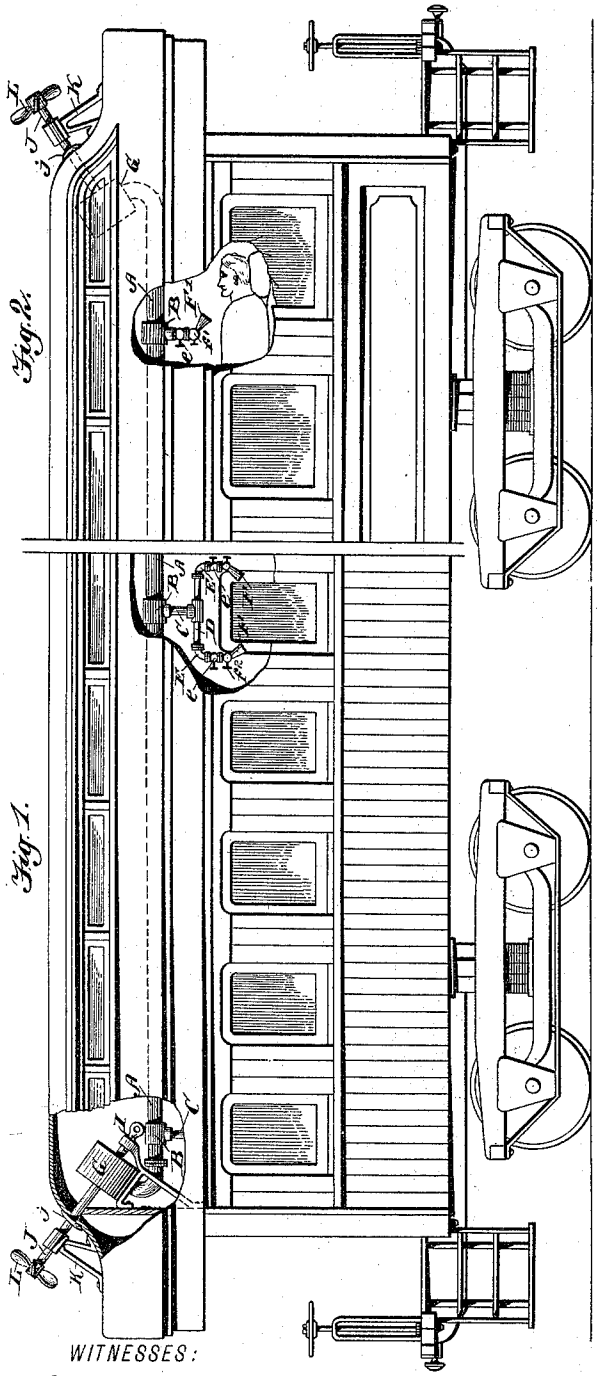

Fig. 2.

Fig. 1.

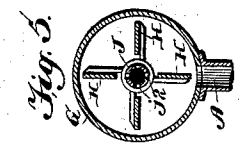

Fig. 5.

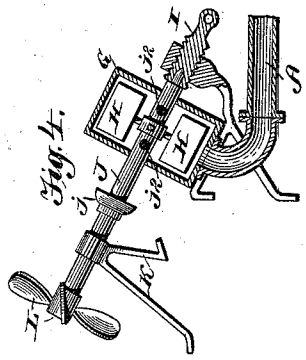

Fig. 4.

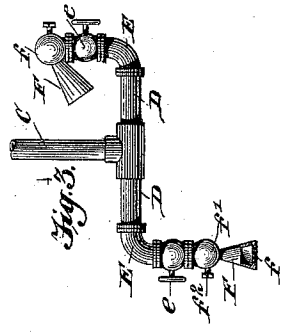

Fig. 3.

WITNESSES:

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CAR-VENTILATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 570,353, dated October 27, 1896.

Application filed March 18, 1896. Serial No. 583,809. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. TULLY, residing at Crystal Falls, in the county of Iron and State of Michigan, have invented a new and Improved Car-Ventilating Mechanism, of which the following is a specification.

My invention relates to improved ventilating means for day-coaches and sleeping-cars; and it primarily has for its object to provide simple, inexpensive, and easily-operated ventilating devices having adjusting means whereby the passenger can regulate the direction and volume of the air-draft as may be desired.

My invention also has for its object to provide a simple arrangement of ventilator-pipes having adjustable discharge-nozzles and fan-blast devices connected therewith located within the car-body operated by means of wind-wheels or propellers located on the outside of the car.

With other objects in view, which will hereinafter be referred to, the invention consists in the peculiar combination and novel arrangement of parts, first described in detail, and then specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of a portion of the passenger-coach with my improvements applied. Fig. 2 is a similar view of a portion of a sleeping-car and showing my improvements as in use. Fig. 3 is a view of a portion of one of the air-pipes and the adjustable or swivel nozzle member. Fig. 4 is a view illustrating the blast-producing devices in detail, and Fig. 5 is a detail view hereinafter referred to.

In its practical construction my invention embodies a series of pipe-sections A A, joined by suitable T-union members B, to a number or all of which are connected branch pipes C, which when the invention is applied to a passenger or day coach preferably extends down at a point above the window and connects with a horizontal pipe member D, which extends to the opposite sides of the window and has elbow members E E, to which the discharge-nozzles F are secured.

The nozzles F, one of which is seen in detail in Fig. 3, are made of conical or bell-mouth shape and perforated or screened or otherwise foraminous, as at *f*, to screen the air and cause it to discharge in a series of fine jets, and such nozzles have a swivel connection *f'* with the elbow portion E, whereby they can be set to any angle desired, they having adjusting-screws f^2 to hold them to their adjusted positions, the elbow-section E in practice being also provided with valves *e e*, whereby the air volume or current may be regulated as desired by the passenger.

When my improvements are to be used on a sleeping-car, devices similar to those used on a day-coach may be employed for use in the daytime and by the lower-berth occupant at night, a supplemental air-nozzle F' being used for the upper berth, as clearly shown in Fig. 2.

The main air-pipes A are connected at one or both ends of the car (preferably both) with air-blast devices, one set of which is most clearly illustrated in Fig. 4, by reference to which it will be seen same comprises a fan casing or chamber G, with which the pipe A joins and in which is held to rotate a fan H, which is held on the inner end of an inclined hollow shaft J, the lower end of which is journaled in a cone-bearing I, while the upper end extends without the car and is journaled in a bearing-bracket K, preferably connected on the top of the car, and which carries a wind-wheel L.

The shaft J, which serves as an air-supply pipe, has a sleeve or collar *j*, which covers the opening in the top of the car and keeps out water, said shaft, which is open at the outer end, as shown, being also provided with openings j^2 j^2, which discharge into the fan-chamber.

The exteriorly-arranged wind-wheel, which has propeller-blades and which is rotated through the motion of the car, rotates the fan-shaft and operates the fan, which drives a steady current of air through the air-distributing means. The air is drawn into the fan-casing through the hollow fan-shaft, which has its outer end open and which accelerates the power of the fan by being disposed longitudinally of the car and in the direction in which the car moves, as the speed of the train will operate to drive air through the hollow shaft. Also by disposing the shafts at an inclination the wind-wheels which are mounted

on the upper ends of the shafts are conveniently extended above the plane of the top of the car in order that both wind-wheels will be operated by the air when the car is in motion.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the advantages and operation of my invention will be readily apparent. It will be observed that during the running of the car the wind-wheels will be operated and the fans rotated, which will serve to draw in the air through the hollow spindles and force it out into the pipes A, from whence it discharges through the conical or bell-mouth nozzles F F′. It is manifest that my appliances when in use will dispense with the necessity of opening windows to obtain fresh air and thereby avoid the annoyance incident to the opening of such windows. Furthermore, the passengers can adjust the valves in the branch pipes to let out more or less air.

It will be understood that the detailed arrangement of parts shown in the drawings may be readily varied or slightly modified without departing from the scope of the appended claims.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. An improved car-ventilating mechanism, comprising air-distributing means, a fan-casing communicating with the same, a hollow fan-shaft disposed longitudinally of a car and having its outer end open and arranged on the exterior of the car, whereby the motion of the same will drive air through it, said shaft forming an air-supply pipe and communicating with the interior of the fan-casing, a fan carried by the shaft and located within the fan-casing, and a propelling wind-wheel fixed to the shaft and arranged on the exterior of the case substantially as and for the purposes described.

2. The combination with a car, of the hollow inclined shafts located at the ends of the car, disposed longitudinally of the ends thereof and having open outer ends arranged above the plane of the top of the car, fans carried by said shaft fan-casings surrounding said fans, communicating with the interior of the shafts and receiving their supply of air from the same, and exteriorly-arranged propelling wind-wheels fixed to the shafts and extending above the top of the car substantially as described.

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