T. H. B. SANDERS.

Apparatus for Ventilating Railroad Cars.

No. 50,960. Patented Nov. 14, 1865.

FIG. 2

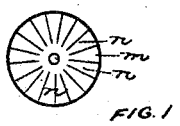
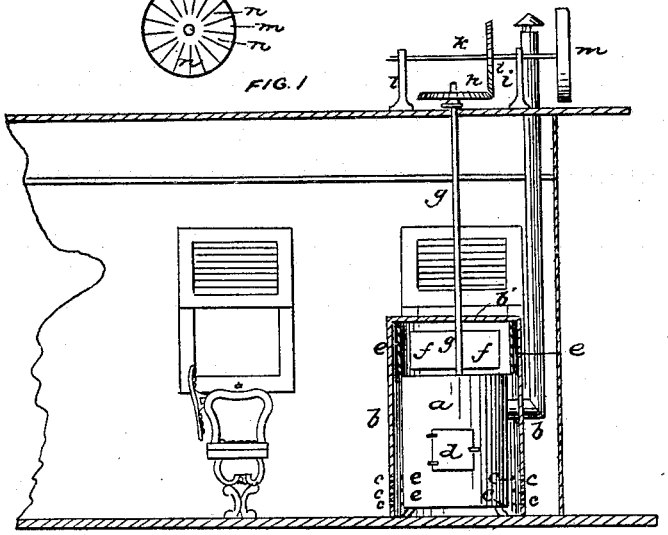


FIG. 1



Witnesses
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UNITED STATES PATENT OFFICE.

THOMAS H. B. SANDERS, OF PITTSBURG, PENNSYLVANIA.

APPARATUS FOR VENTILATING RAILROAD-CARS.

Specification forming part of Letters Patent No. **50,960**, dated November 14, 1865.

To all whom it may concern:

Be it known that I, THOS. H. B. SANDERS, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improved Apparatus for Warming and Ventilating Railroad-Cars; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal section of one end of a railroad-car, showing my heating and ventilating apparatus Fig. 2 is a front view of the vane used for causing the rotation of the fan by which the current of air is created.

The object of my invention is to cause a current of air, either warm or cold, as the case may be, through a railroad-car by means of a fan, the revolution of which is effected by a vane, which is caused to rotate by the rapid passage of the cars through the air.

To enable others skilled in the art to construct and use my improved warming and ventilating apparatus, I will proceed to describe its construction and operation.

At any convenient position in a car I place a stove, *a*, of ordinary construction. This stove is surrounded by a casing, *b*, of sheet-iron or other suitable material, large enough to inclose the stove and fan-box above and leave an air-space all around the stove. The casing is perforated near the bottom with holes *c c*, for the passage of the current of air. There is a suitable opening in the side of the casing corresponding with the door *d* of the stove, which is either closed by a door of its own or the casing is connected with the stove around the stove-door *d*, as may be desired.

On the top of the stove and within the casing *b* is a circular fan-box, *e*, of somewhat larger diameter than the top of the stove, the horizontal top piece, *b'*, of the casing forming the top of the fan-box *e*, and the top of the stove partially closing the fan-box on the lower side, but leaving a circular or annular opening at the bottom of the fan-box *e*, around the top of the stove.

There is an opening in the upper part of the casing near the fan-box, which may be closed more or less by a door or slide for the admission of air into the fan-box.

Inside of the fan-box is a fan, *f*, on a perpendicular shaft, *g*, which extends from the top of the stove *a* upward to the roof of the car, through which it passes, terminating outside of the car in a beveled cog-wheel, *h*, which gears into another beveled cog-wheel, *i*, fixed on a short horizontal shaft, *k*. The horizontal shaft *k* turns in bearings in the standard *l l'*, which are attached to the roof of the car. At one end of the horizontal shaft *k* is a circular vane, *m*, the wings *n* of which radiate from its center and are set at such an angle to the periphery of the vane that as the air passes between the wings it causes the vane to revolve on its axis with the shaft *k*.

When the car is in motion in either direction the vane, being carried rapidly through the air, revolves with its shaft *k* and communicates a rapid rotary motion to the shaft *g*, and the fan *f* inside of the fan-box *e*, which forces a current of air down the space between the casing and the stove, which, issuing out of the holes *c c*, is distributed through the car. If the stove is heated the current of air thus created will be warm, but if there is no fire in the stove it will be cold.

Having thus described my improved apparatus for warming and ventilating railroad-cars, what I claim as my invention, and desired to secure by Letters Patent, is—

1. Creating a current of air in a railroad-car for the purposes of ventilation by means of a fan placed in a case or box and operated by a vane, substantially in the manner hereinbefore described.

2. The combination of a fan-blower operated by a vane in the manner substantially as hereinbefore described, with a stove, for the purpose of causing a circulation of warm air in railroad-cars.

In testimony whereof I, the said THOS. H. B. SANDERS, have hereunto set my hand.

THOS. H. B. SANDERS.

Witnesses:

ALLEN C. BAKEWELL,

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