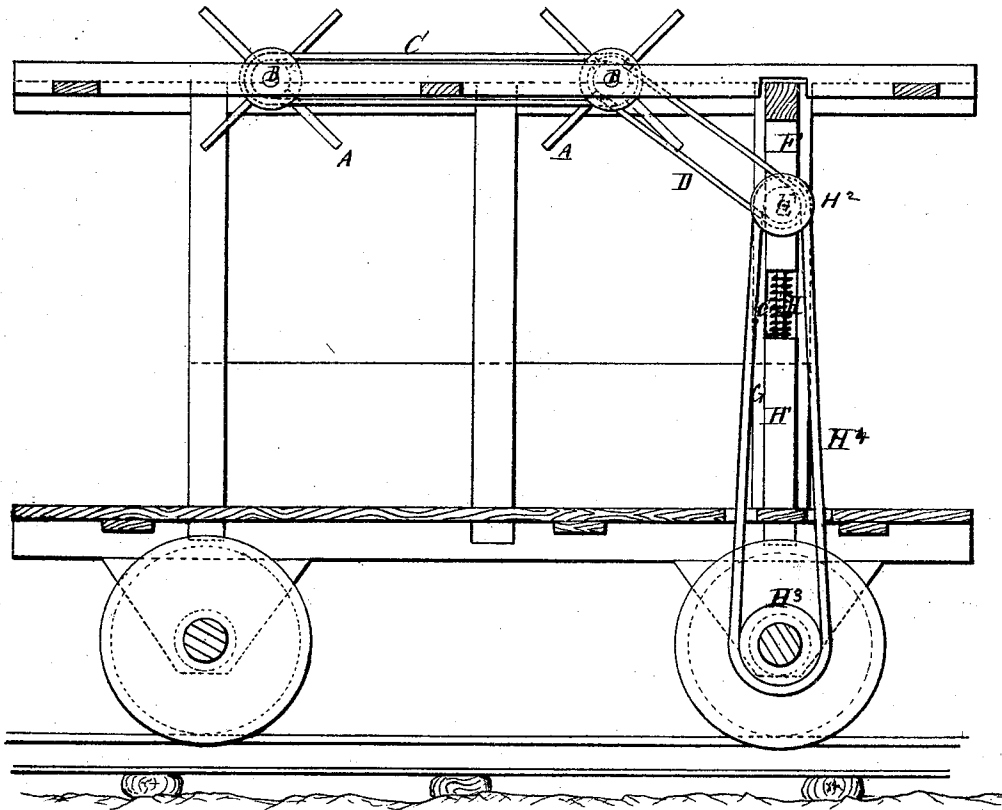


J. S. WILLIAMSON & B. J. BICKNELL.  
Railroad-Car Ventilator.

No. 130,965.

Patented Aug. 27, 1872.



*Witnesses.*

*Geo. Ellpham.*  
*Jo. B. Loomis.*

*Inventors.*

*John S. Williamson,*  
*Byron J. Bicknell,*  
*Chipman & Osmer & Co.,*  
*Attys.*

# UNITED STATES PATENT OFFICE.

JOHN S. WILLIAMSON AND BYRON J. BICKNELL, OF MEMPHIS, TENNESSEE.

## IMPROVEMENT IN RAILROAD-CAR VENTILATORS.

Specification forming part of Letters Patent No. 130,965, dated August 27, 1872.

### *To all whom it may concern:*

Be it known that we, JOHN S. WILLIAMSON and BYRON J. BICKNELL, of Memphis, in the county of Shelby and State of Tennessee, have invented a new and valuable Improvement in a Device for Cooling Railroad Cars; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a longitudinal section of our invention.

This invention has relation to the means for cooling railroad cars and other conveyances; and it consists in the construction and novel arrangement of rotary fans and devices for transmitting motion thereto, substantially as hereinafter described.

Referring to the drawing, A designates rotary fans attached to transverse shafts B journaled to and between the sides of a railroad coach or passenger car near the roof thereof. C designates a belt connecting the shafts B B. D designates an inclined belt connecting one of said shafts with a transverse shaft, E, which has its bearings in the sides of an adjustable frame F. G designates channeled standards which hold said frame and allow it to move up and down. H represents spiral springs

resting on posts H<sup>1</sup>, and supporting the standards or sides of the frame F. H<sup>2</sup> designates a belt-wheel on the shaft E; H<sup>3</sup>, a belt-wheel on the axle I of the car; and H<sup>4</sup>, a belt passing through holes in the floor of the car and coupling the wheels H<sup>2</sup> H<sup>3</sup>.

When the car is in motion the fans are made to rotate through the medium of the shafts, belts, and belt-wheels or pulleys. The object of the yielding frame F is to prevent the belt H<sup>4</sup> from being strained or broken by the motion of car on its springs.

The pulleys H<sup>2</sup> H<sup>3</sup> may be conical to allow the speed of the fan to be regulated with facility. The shafts B B E will be provided with belt-pulleys, either plain or grooved, to hold the belts C D.

What we claim as new is—

The adjustable frame F and springs H, in combination with a car-axle, belt H<sup>4</sup>, shaft E, belt D, and rotary fans A, substantially as described.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

JOHN S. WILLIAMSON.  
BYRON J. BICKNELL.

Witnesses:

JAMES B. COOK,  
A. F. SCHULZE.