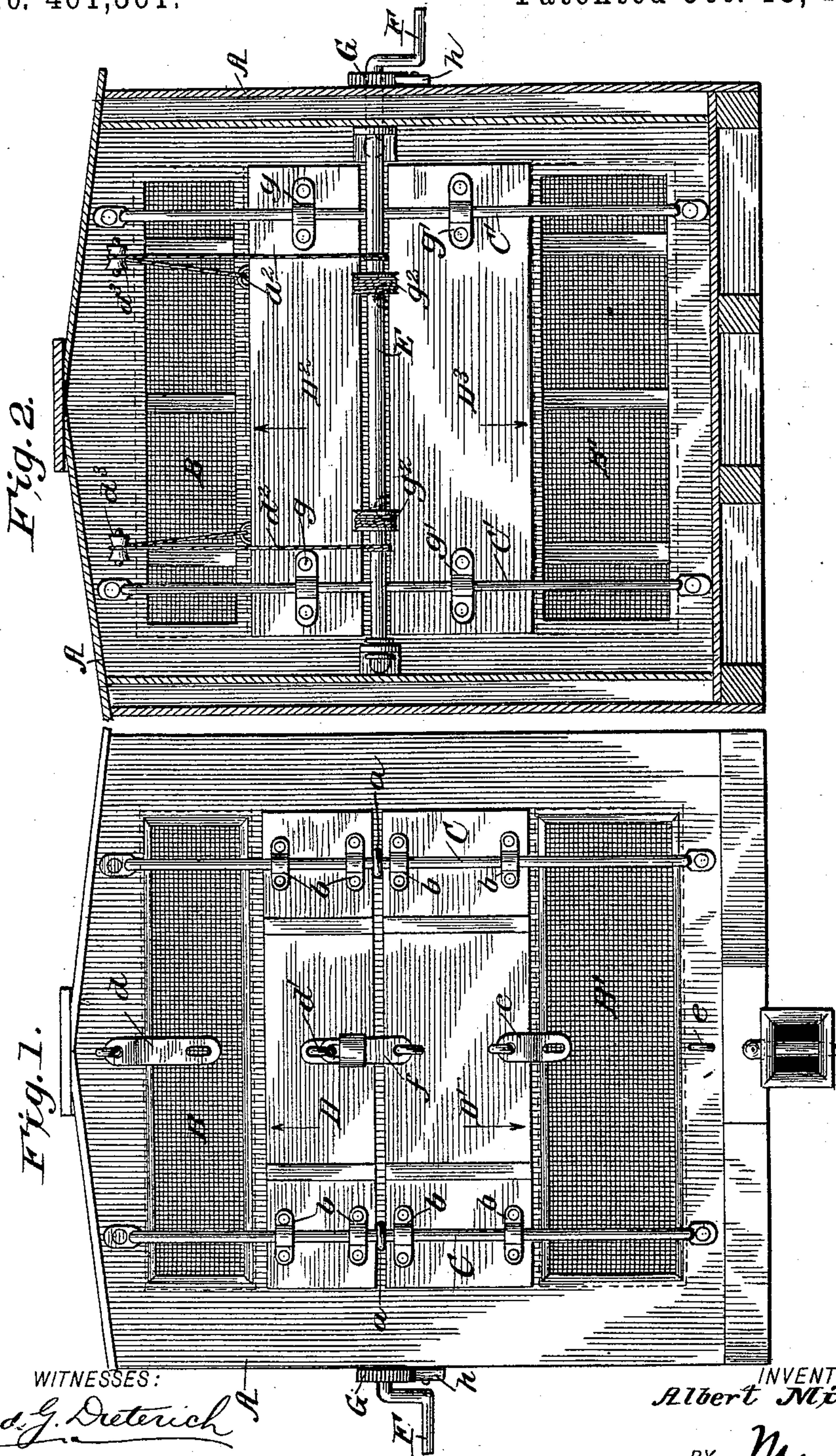


(No Model.)

A. MINNICK.  
VENTILATING DEVICE FOR RAILROAD CARS.

No. 461,361.

Patented Oct. 13, 1891.



WITNESSES:  
*Fred. G. Dieterich*  
*Edw. W. Bayn.*

INVENTOR:  
*Albert Minnick.*  
BY *Mann F. L.*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

ALBERT MINNICK, OF COLTON, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO HIMSELF, AND MYRA BLANCHARD, OF SAN BERNARDINO, CALIFORNIA.

## VENTILATING DEVICE FOR RAILROAD-CARS.

SPECIFICATION forming part of Letters Patent No. 461,361, dated October 13, 1891.

Application filed March 12, 1891. Serial No. 384,843. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT MINNICK, of Colton, in the county of San Bernardino and State of California, have invented a new and  
5 useful Improvement in Ventilating Devices for Railroad-Cars, of which the following is a specification.

The object of my invention is to provide means for ventilating railway-cars, and especially cars designed for the transportation of  
10 fruits, vegetables, meats, fish, and other perishable stuff.

It consists in the peculiar construction and arrangement of a set of sliding doors moving  
15 over openings in the end of the car, as will be hereinafter fully described.

Figure 1 is an outside end view of the car with the doors open, and Fig. 2 is an inside  
20 end view of the same with the doors open.

In the drawings, A represents the end of the car-body, which near the top and bottom is provided with rectangular ventilating-openings, which upon the outside or inside, or both,  
25 are covered with woven-wire cloth, as at B B'. Extending across these two openings are two vertical parallel rods C C, which are bent at their ends, so as to set off a slight distance from the face of the car, and are firmly secured to the car by screws, bolts, or other suitable means. These rods are also preferably  
30 secured to the car at their middle points by brace-eyes *a*, which prevent the rods from springing in or out.

D D' are sliding doors, which are constructed  
35 and arranged to cover the openings B B'. These doors are provided with cleats or cross-pieces to prevent them from warping, and are provided with staples, eyes, or keepers *b b*, by which they are arranged to slide vertically  
40 upon the rods C C, the doors being between the rods and the end of the car. A hasp *d* and staple *d'* serve to lock the upper door over the upper opening, and a similar hasp *e* and staple *e'* serve to lock the lower door over  
45 the lower opening. To hold both doors, they are brought together, as shown, upon opposite sides of the eyes *a a*, and are fastened together by a hasp *f* on the lower door, which hasp engages with the staple *d'* on the upper  
50 door.

Upon the inside of the car there are two other vertical rods C' C', constructed and arranged like those upon the outside and provided with similar doors D<sup>2</sup> D<sup>3</sup>, which slide  
55 upon said rods by means of keepers *g g'*. The upper one of these doors is provided with one or more cords or chains *d<sup>2</sup>*, which pass around pulleys *d<sup>3</sup>* and descend to and are secured about a horizontal shaft E. This shaft is  
60 journaled in bearings attached to the car, and is provided with a crank F for turning it and raising and lowering shutters from the outside of car, and has a ratchet-wheel G and pawl *h* for holding it to its adjustment. The  
65 lower one of the doors is provided with cords or chains *g<sup>2</sup>*, which are also wound upon the shaft E. By turning this shaft E the doors are raised or lowered so as to open or close the openings, both being worked simultaneously.  
70 To enable the shaft to open the doors more rapidly, the cords may be wound upon sheaves or pulleys on the shaft, or if the lower door is wider vertically than the other, as is desirable, and it is necessary to raise it farther or  
75 faster than the other, its cords alone may be wound upon pulleys on the shaft, as shown, so as to give a greater throw to that door for a given movement of the shaft, the cords of the other door being in such case wound directly upon the shaft.  
80

Instead of using the shaft E for raising and lowering the doors, the cords or chains may be run through one or more holes in the end of the car and around pulleys or sheaves, so  
85 as to be worked from the outside.

I am aware that it is not broadly new to provide ventilating-openings in the sides of cars, which openings are covered with woven wire and that similar openings have been provided with both hinged and sliding doors.  
90 Hinged doors cannot be worked within the cars, since the cargo of fruit prevents the radial swing, and where sliding doors are arranged to travel in grooved ways the latter become filled with cinders and also warp from  
95 the weather, so that it is not possible to open and close them. In my invention, with the vertical rods C and C' applied to the vertical walls of the car and offsetting from the same far enough to allow the doors to play between  
100



them and the car and having guide-eyes, loops, or staples for connecting the rods to said doors, the doors may be quickly and certainly adjusted at short notice to protect the fruit from cold waves or sudden storms while in transit. This arrangement of parts is free from all choking by cinders and gripping and binding from wet weather, while the windlass or hoisting-shaft within the car enables the inner doors to be as quickly worked from the outside as the outside doors are, the said inner doors being necessary in connection with the outer doors to more effectually protect delicate fruit from freezing in transit during a sudden cold wave or continued bad weather.

Having thus described my invention, what I claim as new is—

1. The combination, with the vertical wall of a car having an opening at the top and bottom, of a pair of vertical rods  $C' C'$ , secured to the wall of the car at points above and below the openings and offsetting from

the car-wall, two vertically-sliding doors arranged between the rods and the side wall of the car and guided on the rods by eyes or staples, a horizontal windlass  $E$ , arranged in bearings between the top and bottom openings, and cords or chains extending from the windlass in opposite directions and connected to the doors for adjusting the same, substantially as shown and described.

2. The combination, with a car having ventilating-openings at both top and bottom of different sizes and sliding doors to correspond, of a differential windlass or winding-shaft with winding-surfaces of different diameters, and chains or cords for giving a different throw to the two doors, substantially as shown and described.

ALBERT MINNICK.

Witnesses:

S. H. HATCHER,

MORRIS THOMPSON.