(No Model.)

F. W. JONES.

STEP FOR RAILWAY CARS.

No. 408,626. Patented Aug. 6, 1889.

Fig. 1

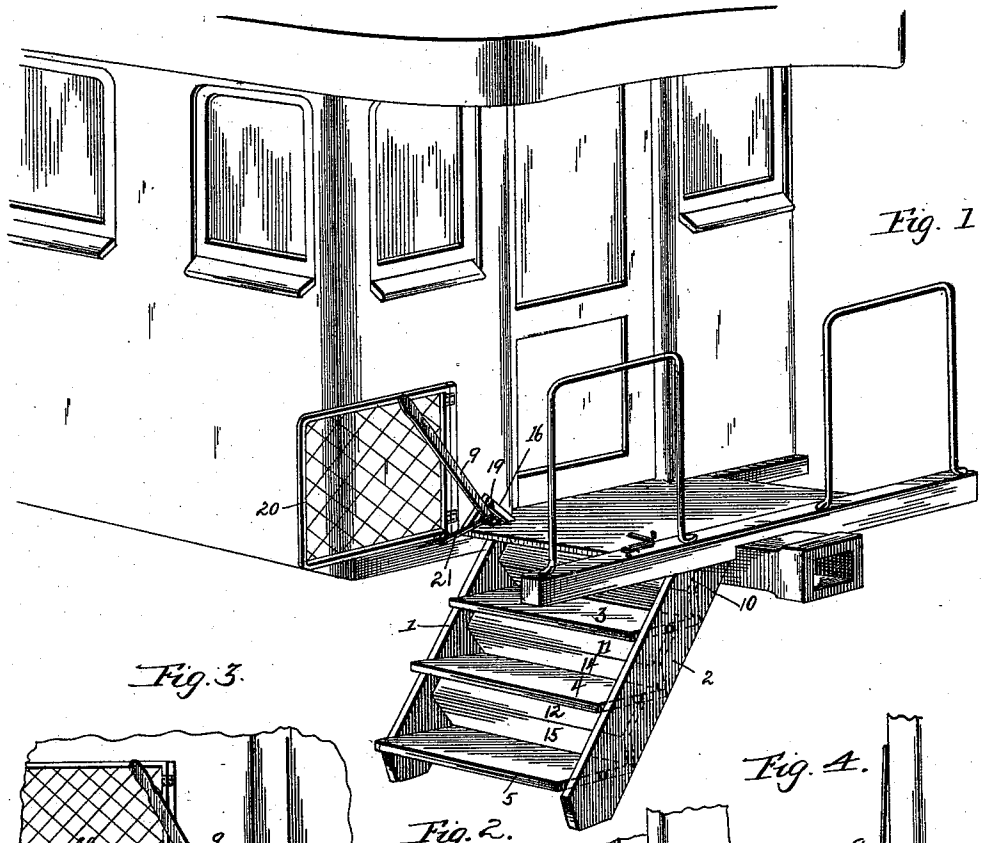


Fig. 3.

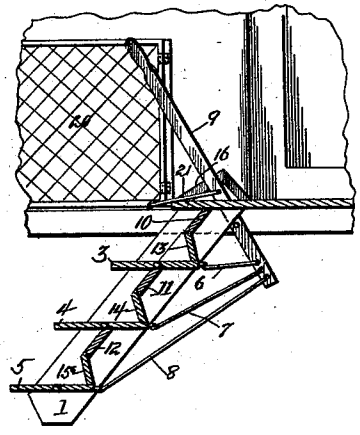


Fig. 2.

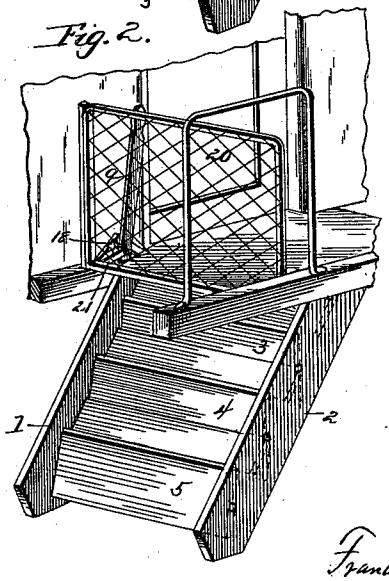
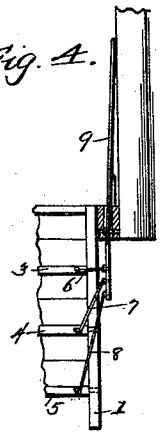


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

FRANCIS WATSON JONES, OF NEAR PERRYVILLE, MARYLAND.

STEP FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 408,626, dated August 6, 1889.

Application filed June 26, 1889. Serial No. 315,595. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS WATSON JONES, a citizen of the United States, residing near Perryville, in the county of Cecil and State of Maryland, have invented certain new and useful Improvements in Steps for Railway-Carriages; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to car-steps, and has for its object the promotion of safety in railroad travel by rendering it difficult to leave or mount upon the steps or platform of a railway-car while the latter is in motion.

It is also an object of the invention to render the steps dust-proof, and yet permit of their opening and closing movement to accomplish the first-stated object.

To these ends the invention consists of a step-frame provided with movable treads capable of being opened and closed when desired, the surface being closed so as to prevent dust from blowing through in either position.

The invention also embodies opening and closing treads and a co-operating gate or guard which is simultaneously closed so as to prevent egress from the platform when the treads are closed, and is similarly opened with the treads to permit access to the platform.

In the accompanying drawings, which illustrate my invention, Figure 1 is a perspective view of the end of a railway passenger-coach provided with my improvements, showing the steps in a position of adjustment to permit egress from the platform. Fig. 2 is a detail perspective view showing the gate and steps closed. Fig. 3 is a sectional view on a plane passing through the steps parallel to the rear side of the car. Fig. 4 is a detail view of the rear side of the steps, showing the operating mechanism.

On parallel side supports 1 2 are trunnioned treads 3 4 5, pivotally connected at the rear by links or connecting-rods 6 7 8 with an operating-lever 9. The lever is pivoted at a suitable point on the platform or end of the car, and is of sufficient length to permit its upper end to be conveniently grasped by a brakeman or other officer of the train while standing upon the platform. The connecting-rods are connected to the lever at suitable points to give the proper thrust to fold the treads when the lever is shifted to one limit of its movement. The fixed portion of the steps is so arranged that whether the treads are folded back, as shown in Fig. 2, or open, as shown in Fig. 1, an unbroken surface will be presented. It is necessary, however, that when open the rear portion of the treads shall be firmly held against upward movement. To accomplish this a series of cross-bars are fixed in the side supports 1 2. These bars are arranged in pairs, and are placed at an angle to each other, the angle opening to the rear. One set 10 11 12 lie with their broadsides in a direction substantially parallel with the slant of the side supports and at such a distance apart as will permit the front edge of the treads to lie snugly against the bar above it when folded. The other set 13 14 15 is made of sufficient width to form a stop for the rear edge of the treads when open, as clearly shown in Fig. 3. They are preferably inclined backward, so as to give a wide stepping-surface to the tread. It will thus be seen that when folded the steps present in front a substantially smooth unbroken surface, offering no foot-hold to any person desiring to board the car, and thus discouraging the attempt.

It will also be seen that when open the steps are as secure as if permanently fixed; and in either position the imperforate surface prevents the circulation of air-currents through the steps and the accumulation of dust thereon, thus making them dust-proof. On the platform is a lock-piece 16, provided with recesses 18 19 at points corresponding to the extreme positions of the lever. The lock-piece is set so as to crowd the lever out of its path, so that its resiliency will hold it firmly in either recess when set there. In shifting the lever the operator must spring it out of the recess before he can reverse its position. On a suitable post near the lever is swung a light gate 20, and a link 21 connects the gate with the lever, the pivotal points being so located that the gate will be closed when the lever is

drawn inwardly. A bar or any other suitable guard would be the equivalent of the gate. A suitable catch is fixed on the platform to co-operate with the free end of the gate and lock it when shut. On leaving a station the brakeman or conductor will draw the lever inwardly, closing the step and closing the gate, thus preventing exit from or entrance to the platform and establishing a safeguard against accident. On reaching a station the lever will be moved outwardly, the gate opened, and the steps simultaneously adjusted, so as to permit ready exit from the car or entrance thereto. A car provided with a device constructed in accordance with my invention has the advantage of assuring great safety to the passenger and yet giving him all the freedom of movement desirable.

It will be noted that by the arrangement described no sheathing is needed behind the steps to prevent the circulation of air-currents, as the treads and the frame form a surface position of the treads through which no openings are offered for the air.

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

1. Steps for a railway-carriage, comprising a fixed frame and movable treads adapted to be folded so as to present a substantially plane surface, or opened to offer a foot-hold, the frame and treads constituting a close or tight surface in either position, whereby the circulation of air-currents through the steps is prevented.

2. Steps for a railway-carriage, comprising a fixed frame and a series of treads pivotally mounted so as to rock therein, fixed stops on the frame to limit the movement of the treads in either direction, and a shifting-lever accessible to an operator on the platform, adapted to rock all of the treads simultaneously in either direction.

3. Steps for a railway-carriage, comprising a fixed frame, a series of treads pivotally mounted so as to rock therein, dust bars or walls between the treads shaped to permit an opening and closing movement of the treads, the surface of the steps being closed at all points to prevent air-currents passing through in either position, and a controlling-lever for shifting the treads.

4. Steps for a railway-carriage, comprising a fixed frame having a series of pivoted treads, as 4, a series of dust-bars and stops, as 11 14, between the treads, a controlling-lever, as 9, connecting-rods, as 7, and a lock-piece for the lever in its extreme positions.

5. Steps for a railway-carriage, comprising a fixed frame, a series of treads pivotally mounted so as to rock therein, the frame and treads forming a substantially plane surface when closed and offering a foot-hold when opened, a gate on the platform leading to the steps, and a controlling device for simultaneously opening or closing the gate and the treads, as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FRANCIS WATSON JONES.

Witnesses:
J. T. GRAHAM,
CHAS. J. DUKE.