(No Model.)

D. R. WING.

COMBINED CAR STEP AND PLATFORM GUARD.

No. 564,675. Patented July 28, 1896.

Fig. 1.

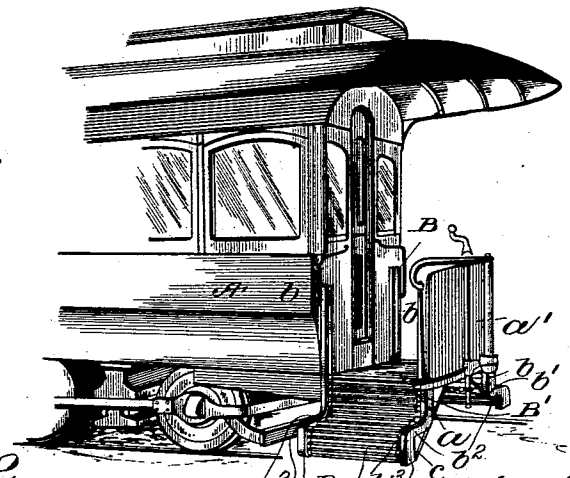


Fig. 2.

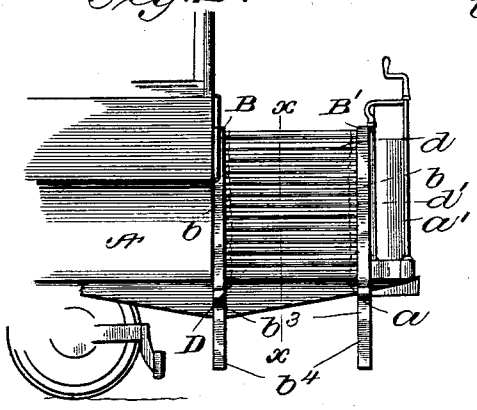


Fig. 3.

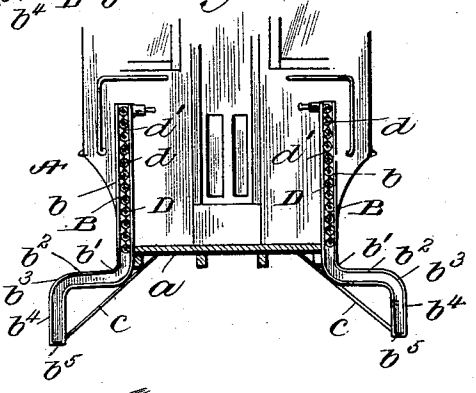


Fig. 4.

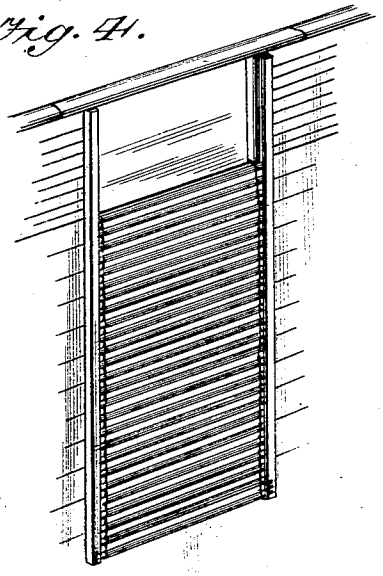
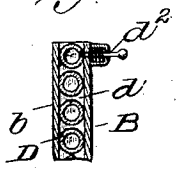


Fig. 5.



Witnesses
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THE NORRIS PETERS CO., PHOTO-LITH., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

DWIGHT R. WING, OF LITTLE ROCK, ARKANSAS, ASSIGNOR OF ONE-HALF TO KATE FLEMING, OF SAME PLACE.

COMBINED CAR-STEP AND PLATFORM-GUARD.

SPECIFICATION forming part of Letters Patent No. 564,675, dated July 28, 1896.

Application filed December 3, 1895. Serial No. 570,964. (No model.)

To all whom it may concern:

Be it known that I, DWIGHT R. WING, a citizen of the United States, residing at Little Rock, in the county of Pulaski and State of Arkansas, have invented certain new and useful Improvements in a Combined Car-Step and Platform-Guard; 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 of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in car-steps; and it has for its object the production of a sliding or rolling step which when not in use can be quickly and readily raised so as to form a platform-guard, whereby passengers are prevented from jumping on or off the car while in motion, and the annoyance of small boys catching on and holding to the gate is obviated, thus reducing liability of accident to a minimum.

In carrying out my invention I form grooved channels or guideways on each end of the car, so curved as to form the proper shape or contour for the step and gate, a series of tubes or slats flexibly connected together being adapted to travel in said channels or guideways. When in their normally lowered position, said tubes or slats will form a car-step, and when in their normally raised position they form a platform-guard, the flexible connections for said tubes or slats allowing the latter to readily conform to the curvature of the channels or guideways.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective illustrating a portion of a car with my invention applied thereto, the tubes or slats being shown in their normally lowered position. Fig. 2 is a side view showing the tubes or slats in their normally raised position. Fig. 3 is a transverse sectional view on the line $x\,x$, Fig. 2. Fig. 4 is a modification. Fig. 5 is a detail.

Referring to the drawings, A designates a car, of any preferred construction, having the usual platform a and dashboard a'.

B B′ are grooved channels or guideways located opposite each other and secured, respectively, one to the car-body and the other to the inside of the dashboard. These guideways consist each of an upper perpendicular portion b, which is bent or curved at its lower end b' to form a horizontal portion b^2 at the level desired for the car-step. Each channel or guideway is then curved at b^3 to form the perpendicular portion b^4. Said guideways are closed at their lower ends b^5 to form stops for limiting the downward movement of the step. Brace-rods c serve to strengthen the perpendicular portions b^4.

D designates the combined step and gate, which consists, essentially, in a flexible member which is adapted to move in channels or guideways B B′ and conform to the curvature thereof. Said flexible member is made up of a series of tubes or slats d, of any preferred material, which are united at their ends by a flexible cord or belt d', whereby said tubes or slats are allowed to have limited play with relation to each other. The downward movement of the flexible member is limited by the closed portions b^5, and when in its normally lowered position the top tube or slat d of said flexible member is on a level with the platform. When in its normally raised position, the top tube or slat is engaged by a spring-clasp d^2, secured in the upper portions of the guideways, or the clasp may be dispensed with and the top tube or slat may hang over the tops of said channels or guideways. When in this position, the lowermost tube or slat is flush with the platform.

The operation is obvious. When it is desired to use my invention as a car-step, the flexible member is lowered, conforming to the shape of the lower curved portions of the channels or guideways. When the car is set in motion, it is only necessary to raise said flexible member until the same engages the spring-clasp to obtain an efficient gate or guard.

It will be observed that my improved car-step is extremely simple and inexpensive in construction, and is not liable to readily get out of order or become deranged.

In Fig. 4 I have shown a modified form of my invention, the same being used as a movable gangway for the sides of ships when in port, instead of the clumsy and dangerous rope ladders now in general use for the same purpose.

I claim as my invention—

1. The herein-described combined car-step and platform-guard, comprising channels or guideways, and a flexible member adapted to slide in said channels or guideways, as set forth.

2. The herein-described combined car-step and platform-guard, comprising channels or guideways curved at their lower ends to conform to the contour of a car-step, and a flexible member adapted to slide in said channels or guideways and conform to the curvature thereof, as set forth.

3. The herein-described combined car-step and platform-guard, comprising channels or guideways, curved at their lower ends to conform to the contour of a car-step, a flexible member adapted to slide in said channels or guideways and conform to the curvature thereof, and means for limiting the downward movement of said flexible member, as set forth.

4. The herein-described combined car-step and platform-guard, comprising channels or guideways curved at their lower ends to conform to the contour of a car-step, a flexible member adapted to slide in said channels or guideways and conform to the curvature thereof, and means for holding said member in an elevated position, as set forth.

5. The herein-described combined car-step and platform-guard, comprising channels or guideways curved at their lower ends to conform to the contour of a car-step and closed at their lower ends, a flexible member adapted to slide in said channels or guideways and conform to the curvature thereof, and spring retaining devices in the upper ends of said channels or guideways adapted to hold said flexible member in an elevated position, substantially as set forth.

6. The herein-described combined car-step and platform-guard, comprising channels or guideways curved at their lower ends to conform to the contour of a car-step and closed at their lower ends, tubes or slats flexibly connected together and adapted to slide in said channels or guideways and conform to the curvature thereof, and spring retaining devices in the upper ends of said channels or guideways adapted to hold said tubes or slats in an elevated position, substantially as set forth.

7. The herein-described combined car-step and platform-guard, comprising channels or guideways curved at their lower ends to conform to the contour of a car-step and closed at their lower ends, tubes or slats adapted to slide in said channels or guideways, a flexible cord or belt connecting said tubes or slats, and spring retaining devices in the upper ends of said channels or guideways adapted to hold said tubes or slats in an elevated position, substantially as set forth.

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

DWIGHT R. WING.

Witnesses:
J. C. McNESS,
H. H. KRODEL.