

H. E. MARCHAND.  
Safety Platform for Cars.

No. 138,669.

Patented May 6, 1873.

Fig. 1.

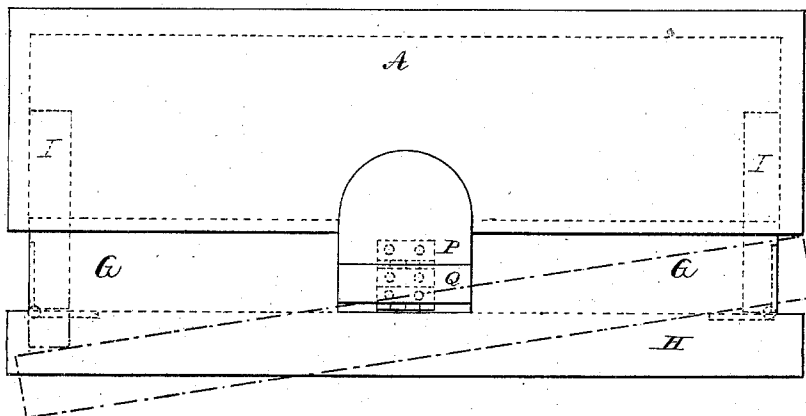


Fig. 2.

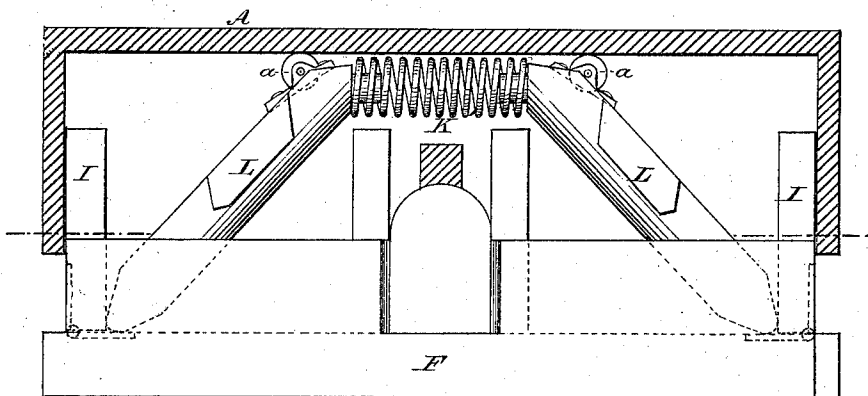
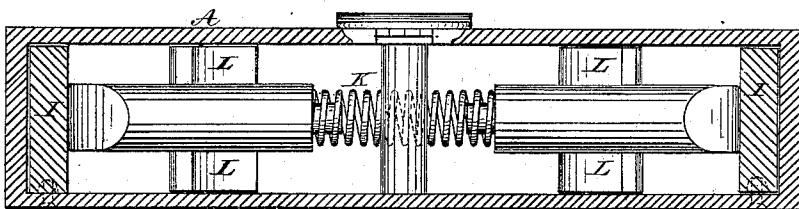


Fig. 3.



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A. H. Norris.

Inventor:

Henry E. Marchand.  
By James L. Norris.  
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Fig. 4.

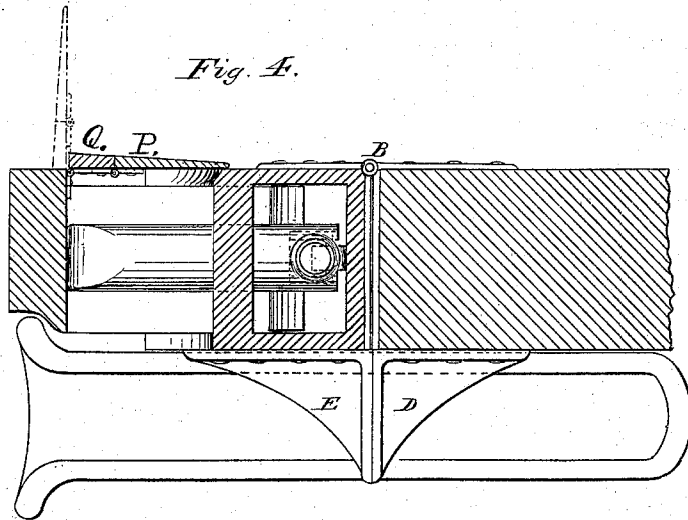
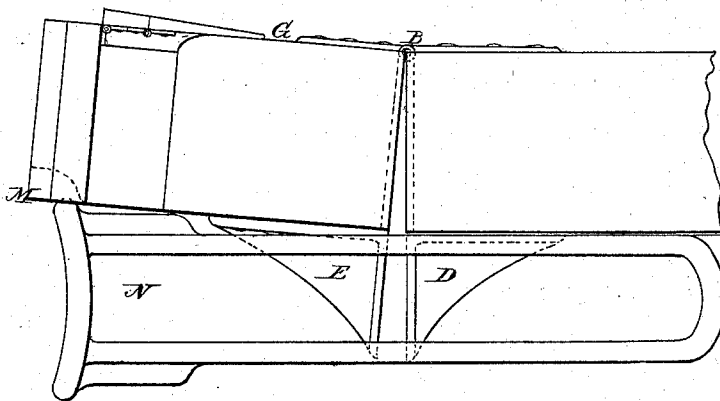


Fig. 5.



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# UNITED STATES PATENT OFFICE.

HENRY E. MARCHAND, OF PITTSBURG, PENNSYLVANIA.

## IMPROVEMENT IN SAFETY-PLATFORMS FOR CARS.

Specification forming part of Letters Patent No. 138,669, dated May 6, 1873; application filed April 3, 1873.

*To all whom it may concern:*

Be it known that I, HENRY E. MARCHAND, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Safety-Platforms for Cars, of which the following is a specification:

This invention relates to an improved safety-platform attachment for railroad cars, designed for bridging over or covering the space between two adjacent cars, thus preventing all accidental falls of passengers or persons crossing from one car to another; and to this end the invention consists in attaching to the ordinary platform of a railroad car a supplementary or safety-platform, which is connected, by means of hinges or other equivalent devices, so as to enable it to rise or fall, according to the height of the cars, and in conformity to the movement of the same; said supplementary platform being made hollow, and inclosing a telescopic or movable section which is pressed forward through the medium of a spring acting upon oscillating or rocking lever-arms, which arms, when two opposing cars collide, will be forced inward or toward each other by the movement of the telescopic section, while always maintaining the platform of two cars in contact with each other, notwithstanding the various movements of the same.

In the drawing, Figure 1 is a plan or top view of my safety-platform attachment for cars. Fig. 2 is a transverse horizontal section of the same. Fig. 3 is a vertical cross-section of the same. Fig. 4 is a longitudinal section, representing the manner of attaching the platform to a car. Fig. 5 is a side view, showing the safety-platform hinged upon the end of the car in connection with the supporting-bracket.

The supplementary or safety-platform A designed to be attached to the ordinary platform or front of a railroad car is made of a box-shape or hollow, as shown, and is connected to the car or platform proper by means of hinges B, which will permit a vertical movement of the platform above a horizontal line. The hinges B may be of any desired construction; and, in order to offer a firm support to the platform for overcoming the downward pressure of the same, I propose to employ supporting-brack-

ets D E, as shown in Fig. 4, which are attached, respectively, to the car and platform, and may be connected by a hinge-joint, in order to permit the rise and fall of the platform. Within the platform A, and projecting from the front end of the latter, is arranged a telescopic or movable section, F, consisting of a tread-board, G, and a transverse buffer-head or front portion, H, to the sides of which are connected, by hinge-joints, lateral arms I, sliding within the platform A in contact with the sides of the same. The movable section F is forced outward from the platform A, so as to come in contact with the corresponding section of an adjoining car by means of a spiral spring or rubber or other spring, K, arranged in a horizontal transverse position at the rear end of the platform, and exerting a pressure upon the inner ends of two diagonally-arranged lever-arms L, the front ends of which rest in or near the corners or angles of the telescopic-platform section. The central lower portion of the telescopic or sliding platform section may be recessed, as shown at M, so as to receive the draw-head N, which thus does not interfere with the proper movement of the platform and sliding section. In the upper side of the sliding-platform section, immediately over the draw-head, is formed an opening for the passage of the coupling-pin, said opening being closed by means of a hinged door or plate, which is composed of two jointed sections P Q, so as to permit the same to move over and to conform to the varying height of the platform A; or said door may be formed in two parts, and be pivoted at one end, so as to open and close either by hand or by an automatic movement. The spring and lever arms, arranged in relation to the sliding-platform section in the manner shown, serve to constantly exert an outward force upon the same for expelling it to its full extent from the platform, so as to always maintain the sliding sections of two adjoining cars in contact with each other for bridging over or covering the entire space between the cars.

The movement of the cars, especially when turning curves, has no effect upon the proper operation of the safety-platform, as the sliding section is capable of being forced inward at its sides independently of the central por-

tion, as shown in dotted lines, Fig. 1; the spring, by reason of its independent action upon either of the rocking-lever arms L, serving to always hold the adjacent platforms in contact with each other. Friction-rollers *a* are applied to the lever-arms L for guiding the same in their movements.

The front end of the sliding-platform section is designed to be either straight, which is preferable, or it may be made curved, as shown.

The jointed or hinged side-arms of the telescopic section will permit the necessary lateral movement of the same, which is a very necessary result, as the cars are constantly varying their relative positions in respect to the rails.

A platform constructed as described combines safety of the operative parts with durability of construction, the hinged platform always adjusting itself to the movements of the car, irrespective of the height of the same, and the sliding section, acting as a buffer for relieving the collision of two opposite cars, and, as it receives the force of the collision instead of the draw-head, as heretofore, it prevents the breakage of the latter; and, further, the sliding or telescopic section, acting in conjunction with the receiver, either or both of which may be of any desired material, will always be such as to counteract most, if not all, concussions of the cars when brought or coming together; thus the disagreeable jarring obviated, the entire train moving with an elastic movement, the sliding section admitting of

such a movement as to counteract all thrusts and jerking to which cars are subjected.

My arrangement also prevents, to a considerable extent, all passage of dust, &c., up between the end of the cars.

What I claim as my invention is—

1. In a safety-platform, the rocking or oscillating lever-arms L, in combination with a fixed or hinged section A, for the purpose of resisting the inward motion of a sliding section, and for permitting a rocking motion of the sliding section, caused by the movement of the cars, substantially as set forth.

2. The combination of a spring, K, with the levers or arms L which are arranged within the receiver of a sliding section for operation, substantially as described, for the purpose specified.

3. A hinged or jointed door, P Q, combined with the sliding section and a fixed or hinged section, A, substantially as described, for the object specified.

4. The sliding telescopic section provided with hinged or pivoted ends for admitting of a rocking and longitudinal motion of such section within the receiver, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 2d day of April, 1873.

HENRY E. MARCHAND.

Witnesses:

ALBERT H. NORRIS,  
JAMES L. NORRIS.