

UNITED STATES PATENT OFFICE.

NELSON GRAY, OF LOUISVILLE, KENTUCKY.

CAR-STEP AND PLATFORM.

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To all whom it may concern:

Be it known that I, NELSON GRAY, residing at Louisville, in the county of Jefferson and State of Kentucky, have made certain new and useful Improvements in Car Steps and Platforms, of which the following is a specification.

My invention is an improvement in car steps and platforms, and particularly in that class of such devices which seek to provide a movable platform-section which may be adjusted to overlie the steps when it is not desired to use the steps and can be adjusted out of the way when it is desired to bring the steps into use.

The invention consists in certain novel constructions and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a sectional view of a car platform and steps, partly broken away, showing the platform-section clear of the steps, so the latter may be used. Fig. 2 is a similar view showing the movable platform-section adjusted to form an extension of the fixed platform. Fig. 3 is a perspective view of a portion of the steps and platform with the movable platform-section in the position in which it is shown in Fig. 1, and Fig. 4 is a detail perspective view illustrating the irons for supporting and operating the movable platform-section.

By my invention I so support the movable platform-section A that it can be adjusted to the position shown in Fig. 2, where it overlies the steps and forms an extension of the platform to the side of the car, or such platform-section A can be swung rearwardly and downwardly from the position shown in Fig. 1 through an opening B at the top of the steps to the position shown in Figs. 1 and 3, wherein the platform-section is clear of the steps and forms at its upper portion the riser leading from the upper steps to the platform, making a nice finish for the steps in the position of the part shown in Figs. 1 and 3.

The section A is carried on the swinging ends of the arms C, to which it is fixed at C'. These arms C are pivoted at C² to the frame or other support and swing with the platform A on such pivot C² as a center.

Where desired, the platform A might be swung by hand from one position to the other;

but it is preferred to operate it by the means shown, which include the hand-lever D, pivoted at D' and having its lower arm connected at D² with a link E, which link E is pivoted at E' to one of the arms C, as will be understood from the drawings. By this construction as the lever D is adjusted from the position shown in Fig. 1 to that shown in Fig. 2 it will correspondingly adjust the platform A from the position shown in Fig. 1 to that shown in Fig. 2, and vice versa.

When the platform A is adjusted to the position shown in Fig. 2, it is supported at its outer end upon suitable underlying supports, which may be the cleats F, as shown, or other suitable constructions.

The section A may be locked in the position shown in Fig. 2 by suitably locking the lever D or in other suitable ways; but I prefer to so lock it by means of the hinged tilting platform-section G, which is hinged at its inner edge G' and lifts at its outer edge G² to permit the adjustment of the section A from one to the other of its positions and lies, as shown in Fig. 2, in rear of the section A and in position for abutment thereby when the parts are as shown in Fig. 2. The section G is pressed normally to the position shown in Figs. 2 and 3 by the spring G³ and may be lifted from such position to that indicated in dotted lines, Fig. 2, by means of the bell-crank lever H, which is pivoted at H', has one arm, H², arranged to bear beneath and lift the section G, and its other arm, H³, extended above the platform, in position to be operated by the foot.

In operation if the parts are as shown in Fig. 1 and it is desired to adjust them to the position shown in Fig. 2 it is only necessary to draw the lever D from the full-line position, Fig. 1, to the dotted-line position shown in said figure, when the platform will be thrown to the position shown in Fig. 2, the rear edge of the platform A striking under and lifting the tilting section G until the platform A passes the section G, when such section G will drop to the position shown in Fig. 2 in rear of the section A and will operate to lock said section in place. When it is desired to adjust the section A from the position shown in Fig. 2 to that shown in Fig. 1, it is only necessary to press with the foot upon

the arm H³ of the lever H to throw the section G to the dotted-line position shown in Fig. 1, when the platform A is free to be operated by the lever D, as desired.

5 It will be noticed that the swinging platform-section A operates in one position as an extension of the platform, as shown in Fig. 1, and in the other position as a part of the step structure, as shown in Figs. 1 and 3, avoiding
10 in the latter instance any unusual appearance and aiding in securing a neat finish for the steps.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—
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1. In an apparatus substantially as described the combination with the steps and main platform portion of the swinging platform-section adapted in one position to form
20 an extension of the main platform portion and swinging from such position rearwardly and downwardly to a point in rear of the steps substantially as set forth.

2. The combination with the steps and the main platform-section of the swinging platform-section, and the tilting platform-section tilting vertically at its outer edge and arranged at such edge to lock the swinging platform-section in position when such section is
30 adjusted to form an extension of the main platform substantially as set forth.

3. The combination of the main platform, the steps, an opening being provided at the upper end of the steps and between the same
35 and the main platform, and the swinging platform-section swinging through said opening as such platform-section is adjusted out of the way or to a position to serve as an extension of the main platform substantially as
40 set forth.

4. The combination of the main platform,

the steps, the swinging platform-section, the arm supporting said section, means limiting the outward swing of said platform-section to secure the same in line with the main platform and means whereby the platform-section may be swung inward from such position to a point where it will not obstruct the steps substantially as set forth. 45

5. The combination of the steps the main platform, the swinging platform-section, swinging inwardly out of the way from the position where it forms an extension of the main platform, the tilting platform-section arranged between the main platform and the
55 swinging section, and the lever for operating said tilting section substantially as set forth.

6. The combination with the steps, the main platform and the swinging platform-section movable to and from a point in rear of the
60 steps and the pivoted arm supporting the same of the pivoted operating-lever and a link connecting said lever with one of the supporting-arms of the swinging platform-section substantially as set forth. 65

7. The combination substantially as herein described of the main platform, the steps, the tilting platform-section hinged at its inner edge, and spring-actuated at its outer edge, a lever for operating said tilting section, an
70 opening being left and provided between the tilting section and the top of the steps, the swinging platform-section operating through said opening, the pivoted arms supporting said platform-section, the lever for operating
75 the swinging section, and the link connecting said lever with one of the arms supporting the swinging section substantially as set forth.

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Witnesses:

F. B. GRAY,
B. E. GRAY.