(No Model.)

M. B. RYAN.

CAR STEP.

No. 468,899. Patented Feb. 16, 1892.

Fig. 1.

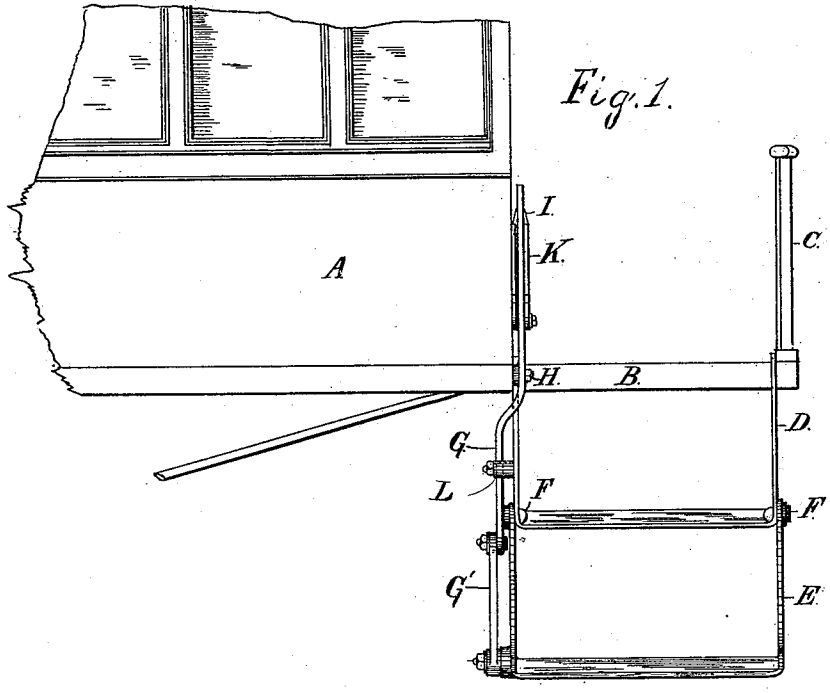
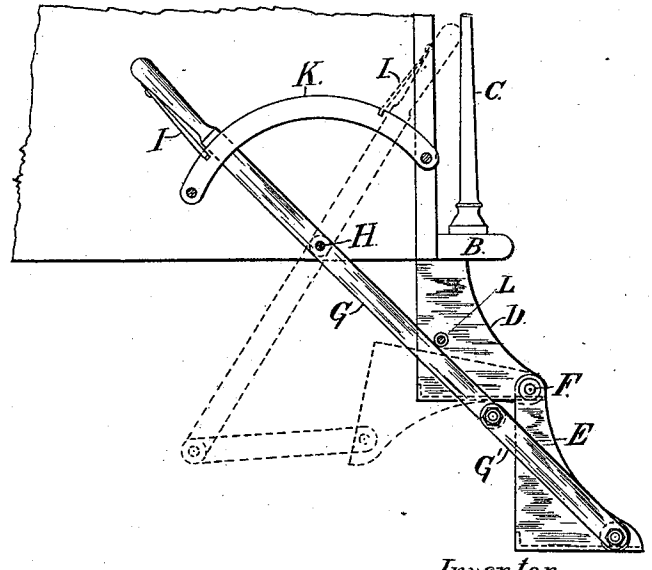


Fig 2.



Witnesses.
Jos. W. Crooles.
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UNITED STATES PATENT OFFICE.

MICHAEL B. RYAN, OF ST. LOUIS, MISSOURI.

CAR-STEP.

SPECIFICATION forming part of Letters Patent No. 468,899, dated February 16, 1892.

Application filed May 19, 1891. Serial No. 393,261. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL B. RYAN, a citizen of the United States, residing in the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Car-Steps, of which the following is a full, clear, and exact description.

My invention relates to steps for cars that are adjustably secured to the car and are adapted, when not being used, to be folded up or otherwise placed in a position conveniently out of the way, and has for its object to supply a need felt for an additional step in instances where the fixed step is too high from the ground for convenience and adapted to be folded to a position out of the way when not being needed.

It consists in an extension-step secured to the fixed step of the car; in the features of novelty hereinafter described; in the manner of securing said step, and in the means for operating the same.

The accompanying drawings, in which like letters of reference denote like parts in the several figures, serve to illustrate my invention.

Figure 1 is a side view of one end of a street-car to which is attached my improved step, and Fig. 2 is an end view of the same or a cross-sectional view taken as on the line 2 2 in Fig. 1.

A is the body of the car, B the platform, and C the standard of the dash-board of the same.

D is the fixed step, as ordinarily rigidly secured to the platform of the car.

E is an extension-step formed as a U-shaped piece with its ends overlapping the ends of the fixed step D, as shown in Fig. 1, secured at either end of the same by the pivot-bolts F at the lower projecting portion of the fixed step D, as shown in Fig. 2. Preferably to the lower projecting portion of the extension-step E is pivotally secured one end of the jointed operating lever-bar G G′, which gets a fulcrum-bearing at H, secured to the end of the car-body A. The free end of the lever-bar G is formed into a handle and is provided with a spring-pawl I, which engages with notches cut in the segmental rack K, whereby the lever-bar G may be locked in a position to hold the step in an open or closed position, as shown in Fig. 2.

L is a bolt or stud secured to the fixed step D and is provided with a rubber washer. The bolt L is secured in such a position as to conveniently act as a bumper or stop to the extension-step E when folded back and under the fixed step D, as shown in dotted lines in Fig. 2, and as a stop for the lever-bar G to prevent its buckling forward when the extension-step E is thrown down to the operative position shown in Fig. 2.

The operation of my device is shown in Fig. 2, in which the two extreme positions—folded in dotted lines and open ready for use—are shown, as well as the relative positions of the operative mechanism.

One of the principal features of advantage in the arrangement of the different parts of my device is in the straight-line position of the jointed lever-bar G G′ when the step E is folded down into the operative position, a position in which the strength of the lever G is taken the greatest advantage of in supporting and bracing the step E when being used. The lever in this position is locked by the spring-pawl I engaging in one of the notches cut in the rack K, and is further strengthened, as before stated, against any forward buckling by the stop or bumper L. When the lever-bar is thrown forward to the position shown in dotted lines in Fig. 2, it will carry the extension-step E back with it, raising it at the latter part of the movement until the step E strikes against the bumper or stop L, when the pawl I is allowed to drop into a notch cut in the rack K in the forward end thereof, locking the whole in the removed position shown in dotted lines in Fig. 2.

The principal use to which I intend to put my step is in instances where it is inconvenient to have the ordinary fixed steps of the car as low to the ground as in practice is sometimes found needful, adapting it to be turned up out of the way when not needed.

As will be evident, while I have shown and described a single extension-step and a single fixed step, yet the folding portion may comprise several steps and that they may be se-

cured to the lower one of several fixed steps, as occasion may require.

I claim—

1. In car-steps, one or more fixed steps rigidly secured to the car, one or more extension-steps pivotally secured to said fixed steps, a jointed lever-bar pivotally secured to said extension-steps, and a stop secured in such a position as to adapt it to act as a buffer for the extension-step when folded back and as a stop to the lever-bar when the extension-step is in the depressed position, combined and operating substantially as described, and for the purposes specified.

2. In combination with the fixed car-step D, the U-shaped extensible step E, the upper edge of the upturned ends of said extensible step being pivotally secured to the lower outer edge of said fixed step, the jointed lever G and G′, pivotally secured to the car and to the outer portion of the lower edge of said extensible step, and the stop L, secured to the said fixed step, combined and operating substantially as described, and for the purposes specified.

3. In combination with the fixed car-step D, the extensible step E, the jointed lever G G′, segmental rack K, and pawl I, adapting the said operating-lever G G′ to be locked in the folded and in the extended positions of said extensible step, combined and operating substantially as described, and for the purposes specified.

In testimony whereof I have affixed my signature, in presence of two witnesses, this 1st day of May, 1891.

MICHAEL B. RYAN.

Witnesses:

A. RAMEL,

J. W. CROOKES.