No. 818,279. PATENTED APR. 17, 1906.

N. A. E. McLENDON.

CAR STEP.

APPLICATION FILED MAY 31, 1905.

2 SHEETS—SHEET 1.

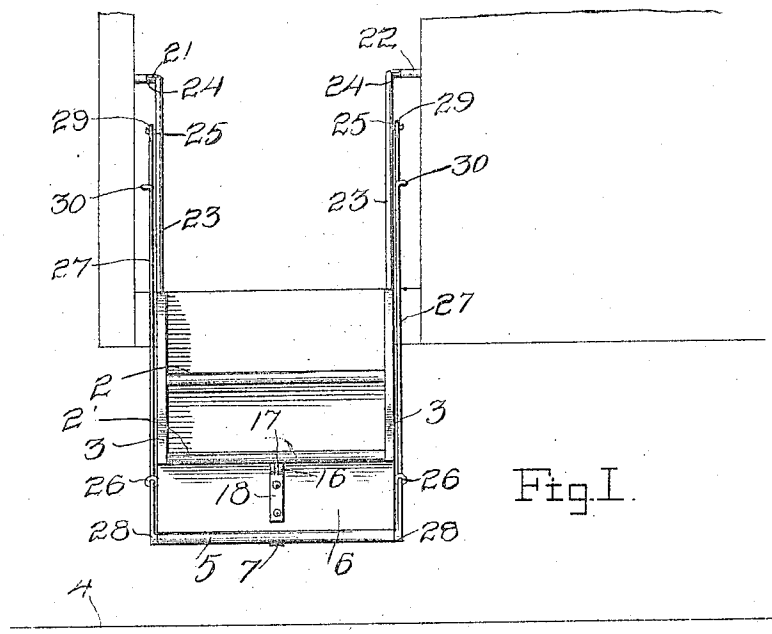


Fig. 1.

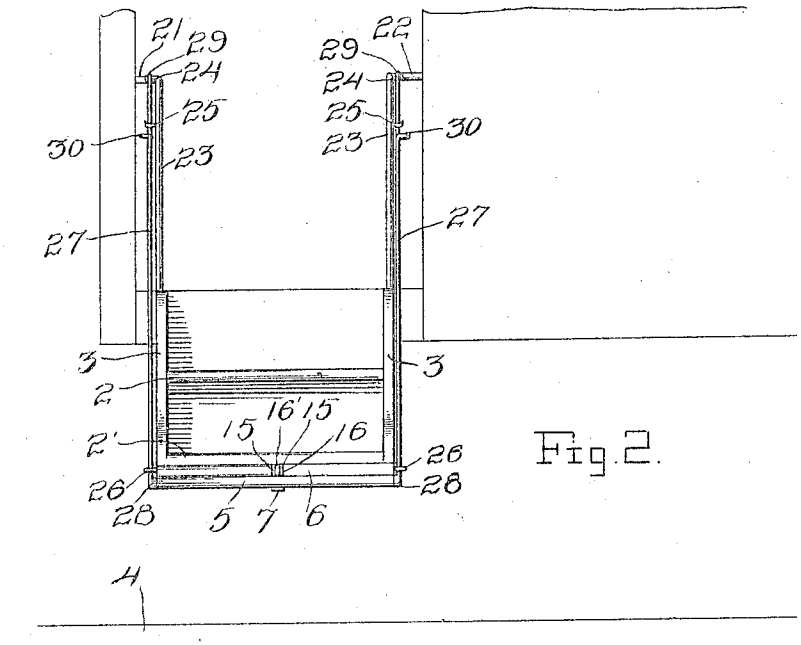


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

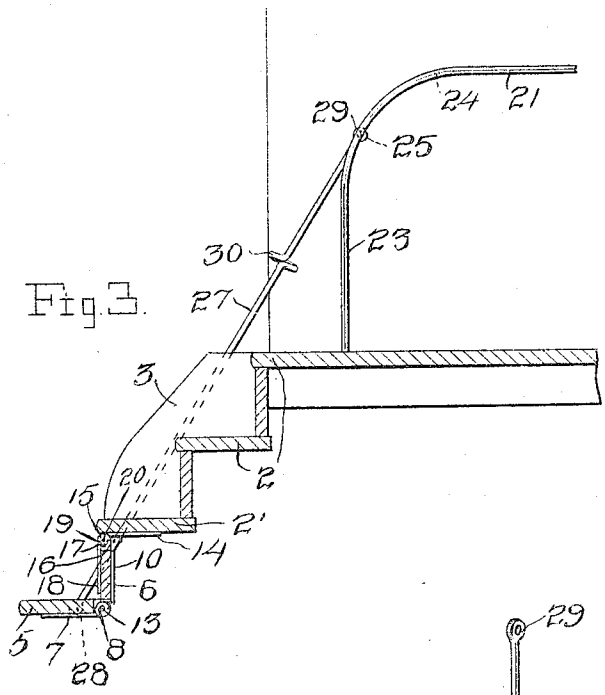


Fig. 4.

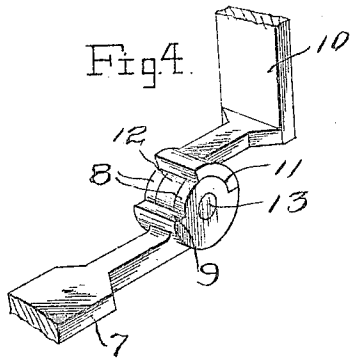
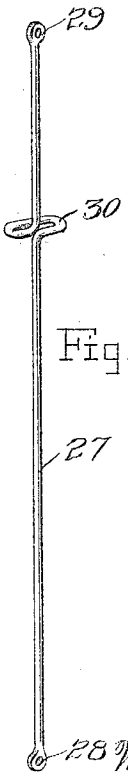


Fig. 5.



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UNITED STATES PATENT OFFICE.

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CAR-STEP.

No. 818,279. Specification of Letters Patent. Patented April 17, 1906.

Application filed May 31, 1905. Serial No. 263,061.

To all whom it may concern:

Be it known that I, NANCY A. E. McLENDON, a citizen of the United States, residing at Sanford, in the county of Conejos, State of Colorado, have invented certain new and useful Improvements in Car-Steps; and I do hereby 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.

This invention relates to folding car-steps.

One object of the invention is to provide steps for railway-cars of such character that the steps may be folded and unfolded so that they may be elevated or lowered.

Another object of the invention resides in the construction and arrangement of steps whereby the same may be unfolded for use and obviate the box usually employed by train conductors, porters, or other attendants to enable passengers to readily alight from trains to the platforms of stations.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claim, it being understood that changes in the form, proportion, and minor details may be made within the scope of the claim without departing from the spirit or sacrificing any of the advantages of the present invention.

In the drawings, Figure 1 is a front elevation of my improved steps in unfolded position and associated with fixed steps of a car, the illustration including part of a car. Fig. 2 is a view similar to Fig. 1, showing the foldable steps in folded position. Fig. 3 is a vertical section through the fixed and foldable steps illustrated in Fig. 1. Fig. 4 is a detail view of coupled hinge plates or members. Fig. 5 is a detail view of one of the hand-levers.

Referring now more particularly to the accompanying drawings, the reference character 1 designates an end portion of a car, having the usual fixed steps 2 and the guard-rails 3 upon each side thereof.

The distance between the lowermost fixed step 2′ is so great that a person cannot readily step therefrom to the platform 4 of the station or from the latter to the former without considerable effort and the assistance of a trainman. It is customary to use a box, stool, or the like (not shown) upon the platform to aid in leaving or stepping upon the lowermost step.

In order to obviate the use of a box, stool, or the like and also the difficulties hereinbefore outlined, I provide an extra step, whose foot portion 5 is hingedly connected to its back portion 6, which latter is hingedly connected to the aforesaid lowermost fixed step 2′.

As shown in the drawings, a plate 7 of a hinge member is secured in any suitable manner to the under side of the foot portion 5, the hinge member or plate 7 being arranged preferably intermediate the ends of the said foot portion and provided at its free end with spaced perforated ears 8, the rear of the foot portion directly over the said ears being notched. It will be observed that a shoulder 9 is formed at the base of the ears, the shoulder being designed for a purpose presently understood.

Secured in any suitable manner to the rear surface of the upright or back of the folding step is a plate or hinge member 10, which projects beyond the edge of the latter adjacent the notched edge of the foot portion 5, the said projecting end being curved or concaved, as at 11, in which curve or concavity is formed a perforated ear 12, designed to fit between the ears 8 of the hinge member or plate 7 of the foot portion, with its perforation alining with the perforations of the first-mentioned ears for the reception of a suitable pivot-pin 13 passed therethrough. It will be seen that the inner face of the curved or concaved end of the hinge member or plate 10, upon opposite sides of its ear, bears against the corresponding edges of the first-named ears 8, the extremity thereof engaging the aforesaid shoulder 9 of the first-named hinge member or plate, resulting in limiting the downward movement of the hinge-plate of the foot portion 5. It will thus be apparent that the ordinary hinges are not used—that is, the hinges wherein the leaves thereof are designed to turn completely back upon each other.

Secured to the under face of the fixed foot portion 2′ of the fixed steps is a hinge member or plate 14, whose free end is provided with depending perforated ears 15, fitting in the notch 16, formed in the edge of the back portion 6, and which receive the single perforated ear 16, formed in the curved end 17 of the hinge plate or member 18, secured in

any suitable manner to the front face of the back portion 6, the said curved end 17 contacting with the shoulder 19, formed upon the upper edges of said spaced ears 15, whereby movement of these last-named hinge members or plates are limited in their movement with respect to each other. The ears 15 and 16 are pivoted together by means of a pivot-pin 20, passed through the perforations, as shown.

The usual guard-rails 21 and 22 are associated with the fixed steps at the upper ends of the posts 23 in the usual manner, and on each of these guard-rails are provided suitable upper and lower hooks 24 and 25, respectively.

Secured to each end of the back 6 of the folding step is a ring or the like 26, which embrace the lower ends of hand-levers 27, one of the latter being arranged upon opposite sides of the steps and pivotally secured at their lower ends, as at 28, to the corresponding ends of the foot portion 5 of the folding steps. Each of these hand-levers is provided with an eye 29 at its upper end for interchangeable engagement with the respective upper and lower hooks 24 and 25. Each hand-lever 27 is provided with a handle or grasping member 30 intermediate its ends, so that pressure may be applied at that point to start an upward movement of the hand-levers or to aid in drawing them downwardly.

If the supplemental, auxiliary, or folding steps were allowed to remain in their lowered position during movement of the train, they would be liable to contact with obstructions or projections along the roadway, and therefore when the train is about to start it is advisable to draw the folding steps up to their closed positions beneath the under face of the lowermost step 2′, and in order to hold them in such position the eyes at the upper ends of each hand-lever 27 are engaged with the corresponding upper hooks 24 of the guard-rails. Now when the train has come to a stop and a passenger desires to alight from the train it is simply necessary for a trainman to disengage the eyes of the hand-levers from the aforesaid upper hooks and push downwardly upon one or both of the levers and engage their eyes in the lower hooks 25, when the auxiliary supplemental, extension, or folding steps will be held firmly in their unfolded position, the aforesaid shoulder of some of the hinge plates or members having their adjacent companion hinge plate or member coöperating therewith to assist in holding the foldable sections in proper relation to each other.

Of course my improved folding steps may be used in connections other than railway-cars.

What is claimed is—

The combination with fixed steps; of foldable steps coöperating therewith, guard-rails associated with the fixed steps, each of said guard-rails having upper and lower hooks; and hand-levers connected with the foldable steps whereby the latter may be folded and unfolded, each of the hand-levers having an eye at its upper end for interchangeable engagement with corresponding upper and lower hooks of the guard-rails.

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

NANCY A. E. McLENDON.

Witnesses:

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R. P. ROWAN.