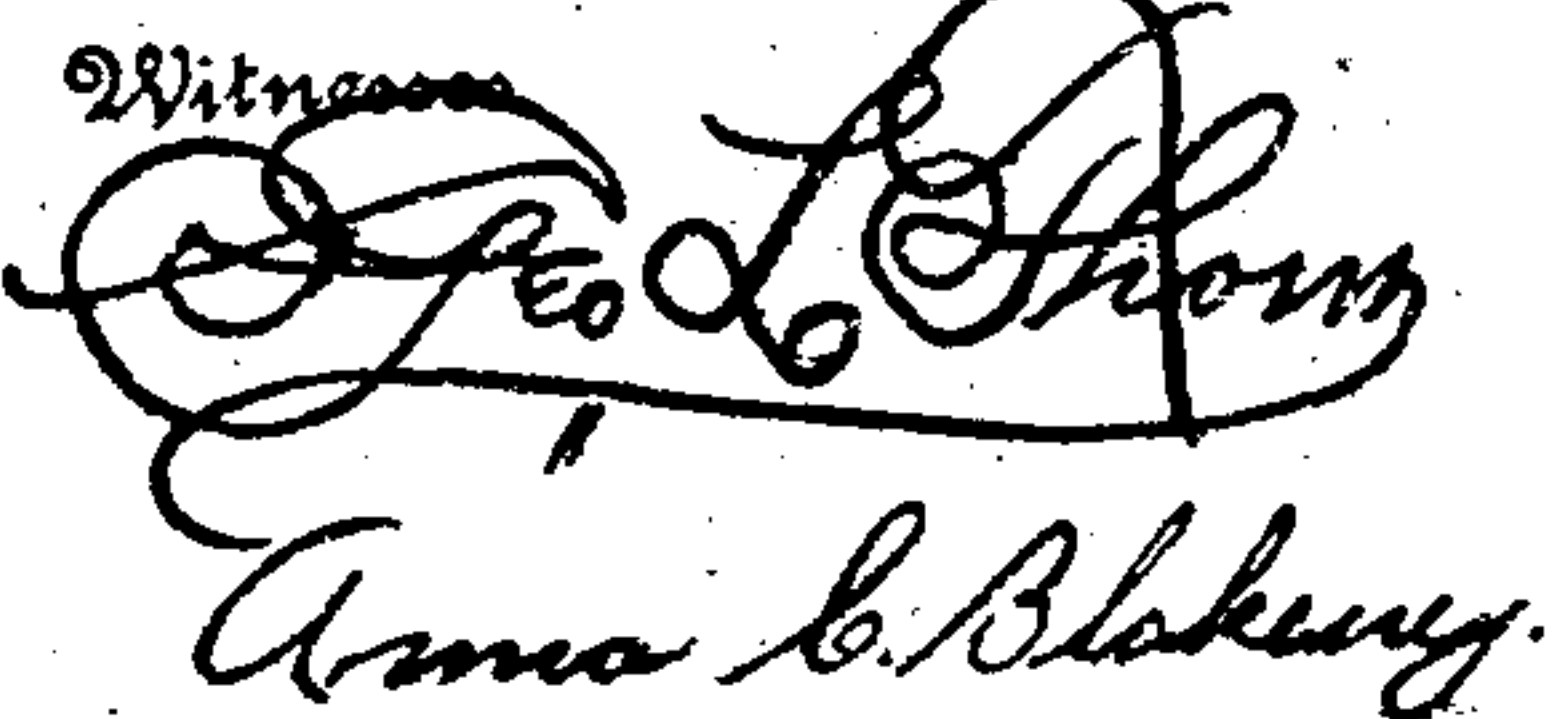


FOLDING CAR STEP.

939,970.

Patented Nov. 16, 1909.



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FOLDING CAR-STEP.

939,970.

Specification of Letters Patent.

Patented Nov. 16, 1909.

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To all whom it may concern:

Be it known that I, GEORGE F. BRANDAU, a citizen of the United States, residing at Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Folding 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, reference being had to the accompanying drawings and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in folding car steps and it has for its object the provision of a folding lower car step adapted to be normally held in a folded position and to be automatically thrown into position for use upon the opening of the car door.

To this end and to such others as the invention may pertain, the same consists in the novel construction, peculiar arrangement, combination and adaptation of parts, all as will be more hereinafter fully described and then specifically defined in the appended claims.

The invention is illustrated in the accompanying drawings which, with the letters of reference marked thereon, form a part of this specification and in which:—

Figure 1 is a side view of one end of a vestibule passenger coach with my invention applied thereto. Fig. 2 is a sectional view taken through the vestibule of the car. Fig. 3 is a detail perspective view of the inside of the car door and connections, the same being shown in closed position. Fig. 4 is a vertical section upon line 4—4 of Fig. 1, the parts being shown in full lines in the position they assume when the step is folded and in dotted lines in the position occupied by the parts when the step is in use, and Fig. 5 is a section upon line 5—5 of Fig. 1.

Reference now being had to the details of the drawings by letter, A designates a car body and B the vestibule provided with the door C and steps D.

E is a metallic plate or shutter hinged at one of its ends to the platform of the car in the rear of the door, as shown, said shutter being so positioned that, when lowered to the position shown in the drawings, covers the space immediately over the steps.

F is a folding step which, at its rear edge,

is connected with the riser F', the step proper being made of heavier material than the riser, so as to cause the step to drop into position for use automatically when released. Said step F is pivotally connected at its rear edge to a shaft F² extending longitudinally through the connecting edges of the step and riser respectively, the ends of said rod having bearings in the lower ends of brackets F³, the upper ends of which brackets are bolted or otherwise secured to the lower ends of the timbers forming the sides of the vestibule frame. One end of said rod F² is extended beyond the outer face of the bracket F³ and connected to this extended end is one end of the crank arm F⁴, to the outer or free end of which crank arm is pivotally connected one end of a curved rod F⁵, which rod is extended upward through the car platform and is bent at right angles to form the horizontal arm F⁶, which arm, when the car step is in a folded position, rests within a groove in the platform provided for its reception. The shutter E, it will be noted, when in a closed position rests directly upon the arm F⁶ and serves to hold the same in the position which it assumes when the step is in its folded position. In order to limit the downward or outer throw of the step, the ends of the back or riser portion F' are adapted to contact with the rear edges of the bracket members F³.

G is a shutter vertically movable within a space or guideway provided upon the inner face of the car door. A knob or handle G' connected with the shutter at a point adjacent to its upper edge is adapted, when moved vertically within a guideway G² provided for its reception, to serve as a means for raising the slide, the slide being adapted to fall by gravity into the position shown in Figs. 2 and 4 of the drawings and, when in this position, serves to close the opening occupied by the car steps.

H is an angle lever, consisting of the downwardly curved body portion H', the free end of which is positioned directly beneath the knob or handle G' connected with the shutter G, the said lever being pivoted, at its angle near the upper end thereof, to a suitable pivot extending from the inner face of the door and the free end H² of said lever is provided with a suitable operating handle H³.

From the foregoing description, the operation of the step will be at once under-

stood. When it is desired to lower the step for use, it is done automatically by the raising of the shutter E. This raising of the shutter E releases the upper end of the curved rod F⁵, thus permitting the lever to extend upward and the folding step will drop by gravity into position for use. An upward movement being then imparted to the shutter G through the medium of the angled lever H by moving the operating handle H³ upward, said shutter being raised, thus permitting the door to be thrown inward to an open position.

It will be noted that, upon the closing of the door, the shutter G will pawl into position to close the opening to the steps and that the lowering of the shutter E upon the horizontal upper end of the curved rod F⁵ will force said rod downward and that in its downward movement will operate the crank arm F⁴ to automatically close the step into a folded position.

What I claim to be new is:—

1. In combination with a car, a pivotal angled gravity step pivoted to the platform, means for limiting the downward throw of said step, a rod pivoted to the step, and a pivotal trap door adapted to engage the end of said rod and hold the step folded.

2. In combination with a car, a step having pintles projecting therefrom, bracket arms secured to the platform and in which said pintles are pivotally mounted, a right angled projection for said step adapted to contact with the rear edges of said bracket arms to limit the outer throw of the step, a rod connected to one of said pintles, and a hinged trap door adapted to bear against the end of said rod to hold the step folded.

3. In combination with a car, a step having pintles projecting therefrom, bracket arms secured to the platform and in which said pintles are pivotally mounted, a right angled projection for said step adapted to contact with the rear edges of said bracket arms to limit the outer throw of the step, a crank arm fixed to one of said pintles, a rod pivoted to said crank arm and having a free angled end, a trap door hinged upon the platform and adapted to engage the free end of said rod to normally hold the step folded.

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

GEORGE F. BRANDAU.

Witnesses:

GEORGE S. BARBER,

JOSEPH BURGER.