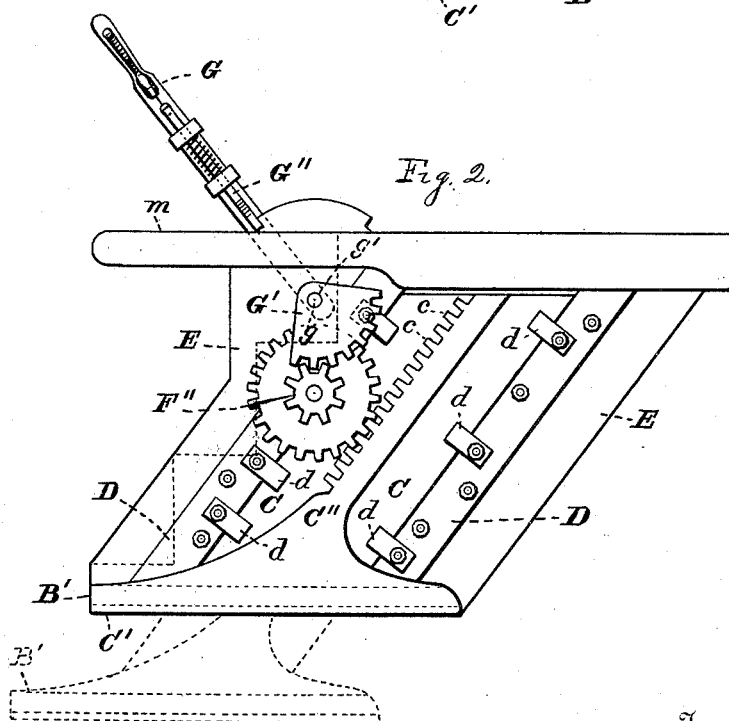
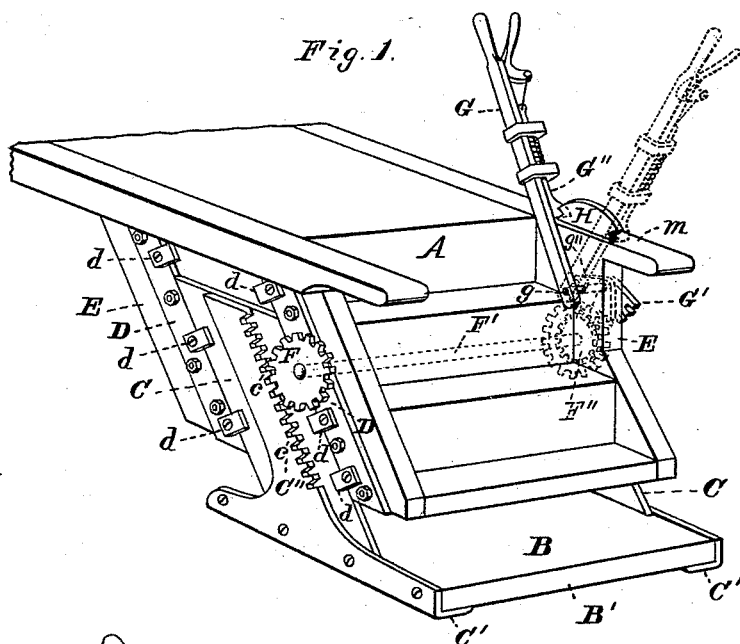


(No Model.)

F. W. MILLER.
CAR STEP.

No. 423,262.

Patented Mar. 11, 1890.



Witnesses

Villette Anderson,
Philip C. Masi.

Inventor

Frank W. Miller
By his Attorney
E. W. Anderson.

UNITED STATES PATENT OFFICE.

FRANK W. MILLER, OF BEAVER DAMS, NEW YORK.

CAR-STEP.

SPECIFICATION forming part of Letters Patent No. 423,262, dated March 11, 1890.

Application filed October 31, 1889. Serial No. 328,798. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. MILLER, a citizen of the United States, and a resident of Beaver Dams, in the county of Schuyler and State of New York, have invented certain new and useful Improvements in Car-Steps; and I do 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 letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of this invention and is a perspective view. Fig. 2 is a side view.

This invention has relation to adjustable steps for railway-cars, adapted to facilitate their use by passengers when at a station, while permitting them to be raised to an elevated position when the cars are moving; and the invention consists in the novel construction and combination of drivers, as hereinafter set forth.

In the accompanying drawings, the letter A designates the upper portion of the steps, which is permanently secured to the platform and frame-work of the car, and B represents the adjustable section or lower step, which is provided with lateral oblique arms C, moving in oblique ways D on the outer walls of the sides E of the portion A. To the sides E are secured the way-strips or guides D, which are of metal and are provided with the flange-lugs *d*, which are preferably removable and secured to said ways by bolts, and, projecting inward beyond the edges of the way-strips, serve to hold the slide-arms C of the adjustable step in position, while permitting the ready removal thereof when desired. The metallic arms C are horizontally extended and bent inward at their lower portions, as at C', to form broad bearings to which the lateral edges of the lower step-board B' are securely fastened. Said arms are also provided with extended ratchet-ribs C'', having the edge-tooth *c* at their upper portions presented outward, as indicated, and adapted to

engage the ratchet-wheels F, which are secured on the ends of a shaft F', which passes in rear of the upper step-frame. By operating the ratchet-shaft the lower step is let down or raised, as may be required. When in raised position, this lower step can be brought immediately under and in contact with the lower surface of the bottom step of the upper or fixed section A, so that there is no liability of a crevice being left between these two steps to cause accident when the cars are in motion. The outer ratchet-wheel on the shaft F' is provided with a concentric pinion F'', also rigidly secured to said shaft and adapted to engage the toothed segment G' of the segment-lever G, which is provided with the longitudinal spring slide-latch G'', adapted to engage the inner or outer notch of the segment-catch H, which is secured to an extension *m* of the platform-frame, the handle portion of said lever extending above said frame, as indicated. The fulcrum-pin *g* of the segment-lever is pivoted in a bearing *g'*, secured to the front of the upper step-frame, said bearing being set inward from and below that portion of the extension *m* to which the segment-catch is secured. When the cars are stopped at a station, the brakeman, taking hold of the segment-lever, releases its spring-latch and pulls the segment-lever outward and downward, this action turning the ratchet-wheel to cause the adjustable step to descend in an oblique direction outward as well as downward, so that the step-board B' is brought to convenient position between the ground and the bottom step of the upper section A. When the cars start, the brakeman should raise the adjustable step to its highest position.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

The combination of the framing of the upper or fixed step section having the oblique way-strips provided with the flange-lugs, the adjustable bottom-step section provided with lateral oblique arms moving between said oblique way-strips and provided with extended ratchet-ribs, the shaft carry-

ing pinions engaging said ratchet-ribs, and
the hand-lever having a segmental rack or
sector engaging a third pinion on said shaft,
said hand-lever having a spring-held detent
5 or latch engaging a notched segment or catch,
said bottom-step section adapted in its raised
or elevated position to fit directly under and
in contact with the under side of the bottom

step of the said fixed top section, substan-
tially as set forth. 10

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

FRANK W. MILLER.

Witnesses:

ARTHUR C. WOODWARD,
ROBT. F. MILLER.