(No Model.)

J. C. F. SCHENCK.

CAR STEP AND PLATFORM SAFETY BAR.

No. 406,960. Patented July 16, 1889.

Fig. 1.

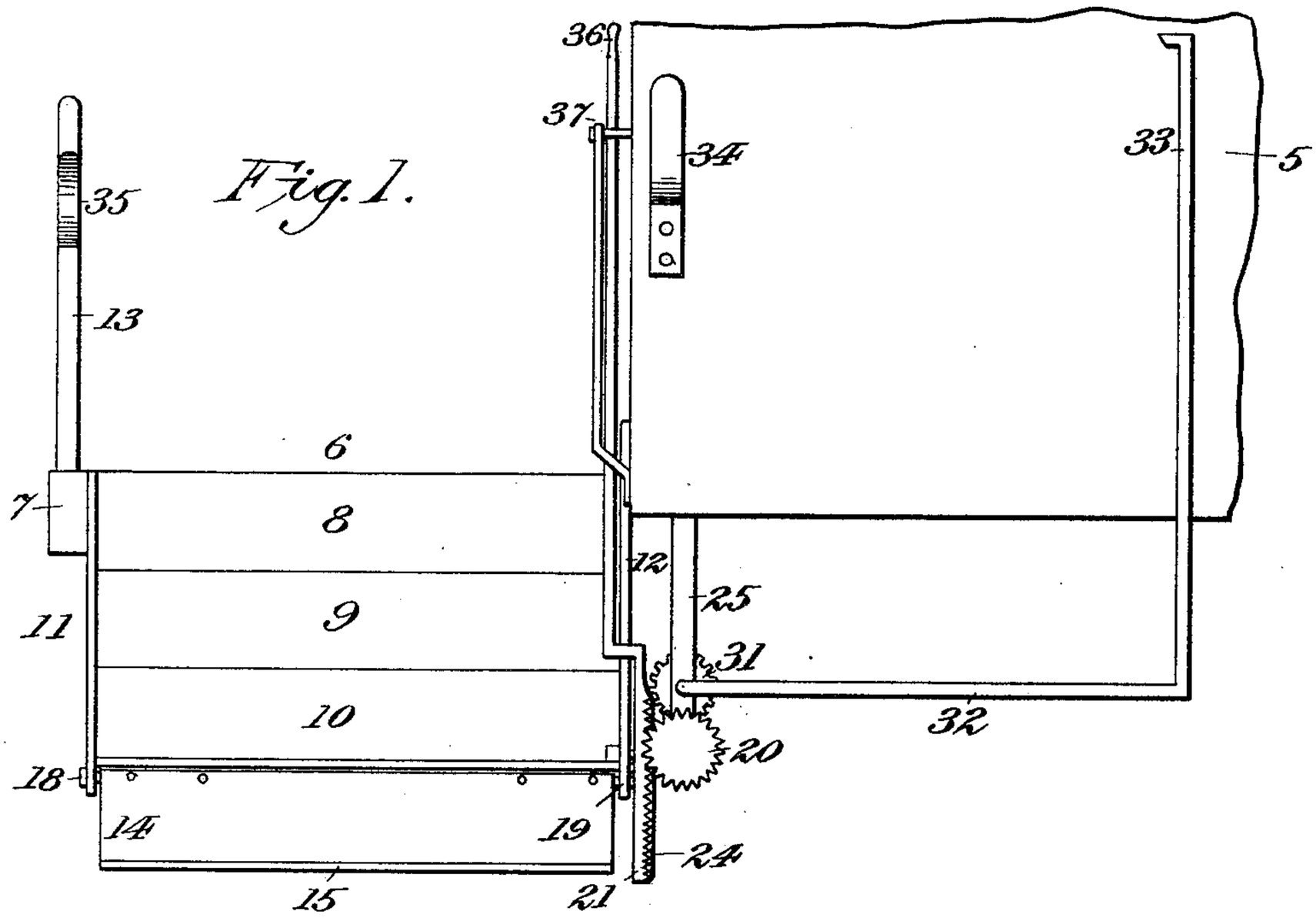


Fig. 2.

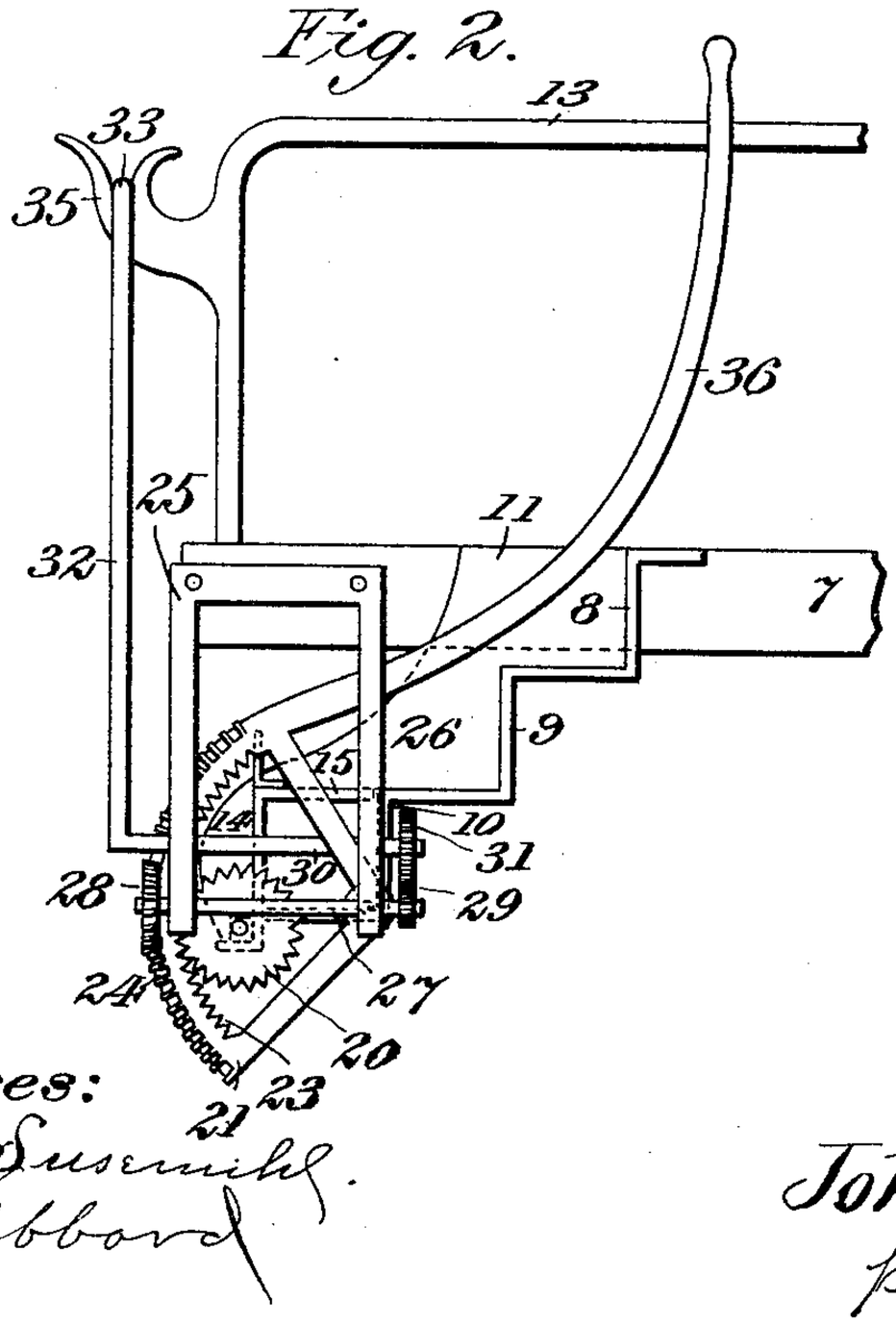


Fig. 3.

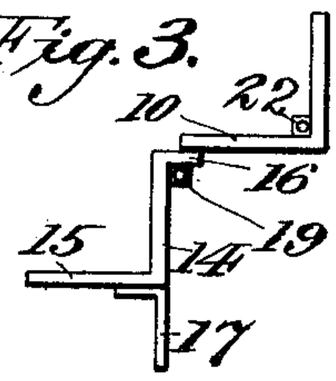
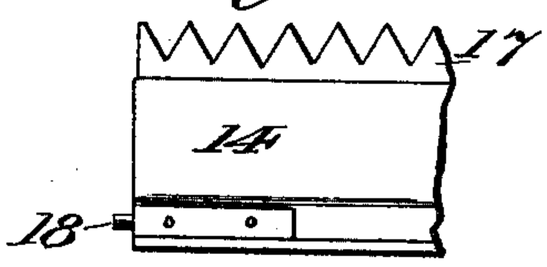


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN C. F. SCHENCK, OF MOLINE, ILLINOIS.

CAR STEP AND PLATFORM SAFETY-BAR.

SPECIFICATION forming part of Letters Patent No. 406,960, dated July 16, 1889.

Application filed March 25, 1889. Serial No. 304,766. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. F. SCHENCK, a citizen of the United States, residing at Moline, in the county of Rock Island and State of Illinois, have invented a new and useful Improvement in Extensible Folding Car Steps and Platform Safety-Bar, of which the following is a specification.

My invention relates to that class of extensible folding car steps and platform safety-bar in connection with railway-cars, wherein the step is unfolded and the safety-bar removed when in use, and folded and the safety-bar thrown over and across the steps when not intended for use; and the object of my improvement is to provide mechanism for readily arranging the steps for use or non-use, as may be desired. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view of the steps from one side of the car. Fig. 2 is a side view of the steps, the body of the car and other parts being removed to better illustrate the mechanism. Fig. 3 is a side view of the extension-step and step 10, and Fig. 4 is a sectional view of under part of the extension-step when turned over.

5 is a section of the side of a car adjacent to its platform. 6 is its platform.

7 is a cross-timber at the outer end of the platform.

8, 9, and 10 are permanent steps attached to the platform, and 11 and 12 are permanent side pieces to said steps.

13 is the front railing attached to the platform.

14 is the riser of the extension-step, and 15 is its tread. The upper side of the riser 14 is bent at right angles, as at 16, so that when the extension-step is in its operative position (see Fig. 1) that part 16 rests against the under surface of the outer edge of the tread-step 10. On the inner lower edge of tread 15 is attached a horizontal guard-bar 17, its lower edge toothed. In the angles made by the part 16 and the riser 14 are attached journals 18 and 19, and at the lower edge of side pieces 11 and 12 are perforations through which said journals are passed, and upon the outer end of journal 19 is attached a cog-wheel 20. A segment 21 is journaled upon pin 22, which is attached to the outer side of side piece 12. The inner arc of said segment is provided with cogs 23, which engage with cog-wheel 20. The outer arc of said segment is provided with beveled cogs 24.

Hangers 25 and 26 are attached to the frame of the car, and at the lower ends is journaled the horizontal cross-shaft 27, at the outer end of which shaft is attached a mitered cog-wheel 28, and at its inner end a cog-wheel 29. The mitered cog-wheel 28 engages with the beveled cogs 24 of the segment 21. Above cross-shaft 27 is journaled, through said hangers, another horizontal cross-shaft 30, to the inner end of which is attached a cog-wheel 31, which engages with the cog-wheel 29. At the outer end of cross-shaft 30 is attached a crank-arm 32, having at its outer end the right-angled safety-bar 33. Attached to the side of the car, near its end, is the bar-support 34, and also attached to the side of railing 13 is another bar-support 35, both being substantially on the same horizontal line.

Attached to the upper end of the segment 21 is a curved lever 36. A rack 37 is attached horizontally on the front end of the car, between which and the car the upper end of said lever passes, said rack being provided with suitable notches for holding the lever in its desired position.

When the car is at a station, the extension-step is placed in its operative position by throwing the lever out of the notch in rack 37 and turning it toward the outer side of the car, and in such movement the segment is rotated and in turn rotates cog-wheel 20, thus turning over the extension-step to its operative position, as shown in Fig. 1. By this operation the mitered cog-wheel 28, its shaft 27, and inner cog-wheel 29 is rotated, thus causing cog-wheel 31 and its shaft 30 to rotate and turn the crank-arm 32 and its safety-bar 33 in the position shown in Fig. 1, such safety-bar being supported in the supports 34 and 35 when the step is turned up. When leaving the station, the operator moves the lever-arm to the opposite position, as shown in Fig. 2, which, through the reverse action of the segment and cog-wheels, folds the extension-step against permanent step 10 and turns the crank-arm 32 in a vertical position, so that its safety-bar 33 is in a horizontal position, resting in supports 34 and 35, and the horizontal toothed

bar 17 is in the position shown in Fig. 4, which, together with the safety-bar, form an obstruction to prevent persons jumping upon the platform of the car or from alighting therefrom.

When the extension-step is folded, the tread of step 9 is widened, so as to afford a standing place for an operative of the train or for passengers, the guard-bar 17 and safety-bar 33 preventing such persons from falling off while the train is in motion.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a railway-car, an extensible folding step journaled to the permanent step, with a cog-wheel attached to one of said journals engaging cogs on a segment operated by a lever, with means for locking said lever, substantially as described.

2. In a railway-car, a safety-bar attached to a crank-arm having engagement by cog-wheels with the cogs upon a segment operated by a lever, with means of locking said lever, substantially as described.

3. In combination with a railway-car and with the platform and permanent steps thereof, an extensible folding step journaled to the permanent step, with a cog-wheel attached to one of said journals engaging cogs on a segment, and a safety-bar attached to a crank-arm having engagement through cog-wheels with cogs upon said segment, such segment being operated by a lever, substantially as described.

4. In combination with a railway-car and with the platform and permanent steps thereof, an extensible folding step journaled to the permanent step, and a safety-bar attached to the car, with positively-operating devices for folding said step and placing said bar horizontally over the same and supporting such bar, and with positively-operating devices for unfolding said step and removing said safety-bar, substantially as described.

5. In combination with a railway-car and with the platform and permanent steps thereof, a folding step journaled to the lower permanent step, with a positive device for folding such step against the riser of said lower permanent step and temporarily widening the tread of the next permanent upper step, a horizontal guard-bar projecting from the lower surface of the inner edge of the tread of such folding step, and a horizontal safety-bar supported above and across such step, with a positive device for placing said bar in such position or removing it therefrom, substantially as described.

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