O. ANDERSON & C. NELSON.

CAR STEP.

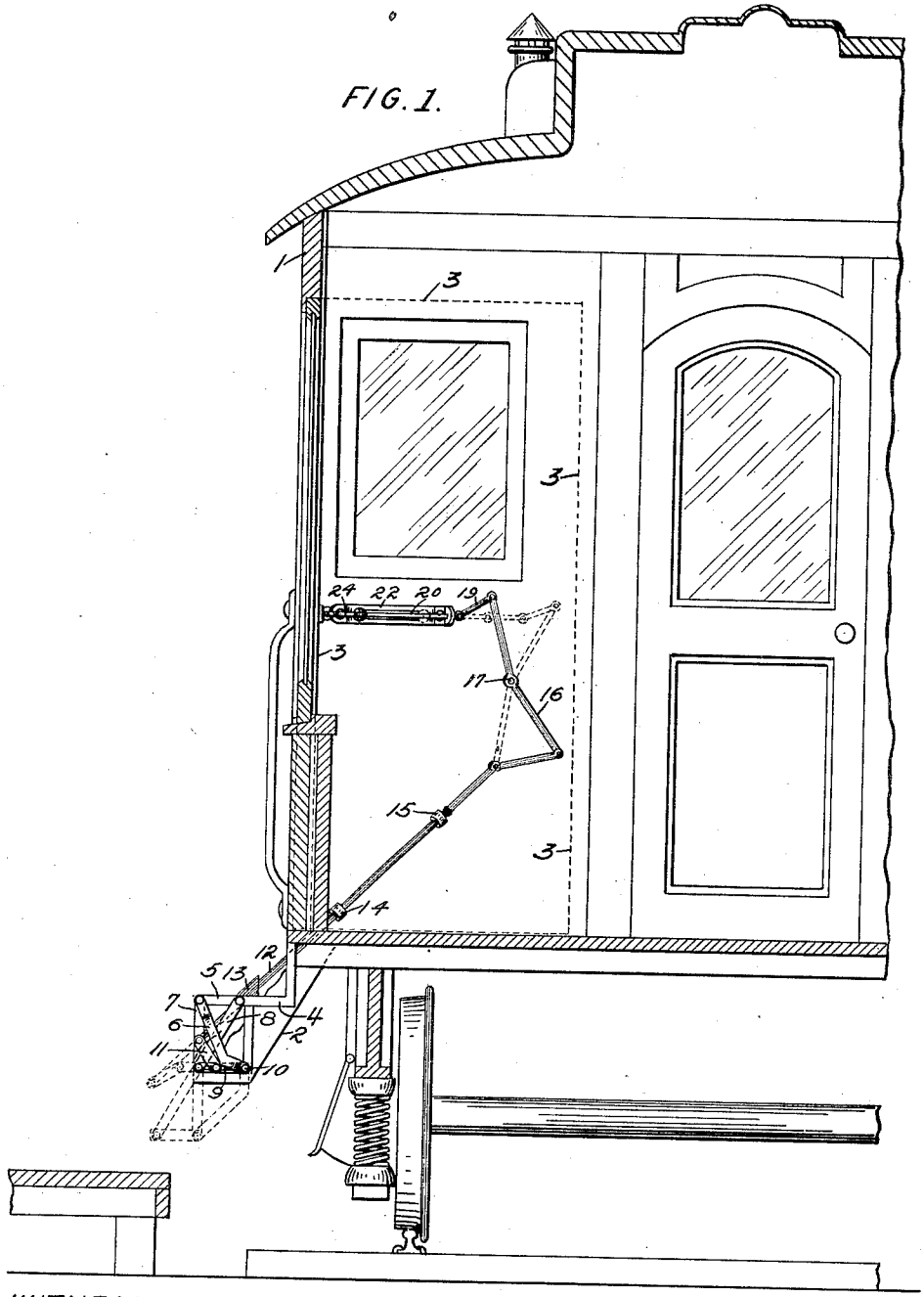
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1,071,129.

Patented Aug. 26, 1913.

4 SHEETS—SHEET 1.

FIG. 1.



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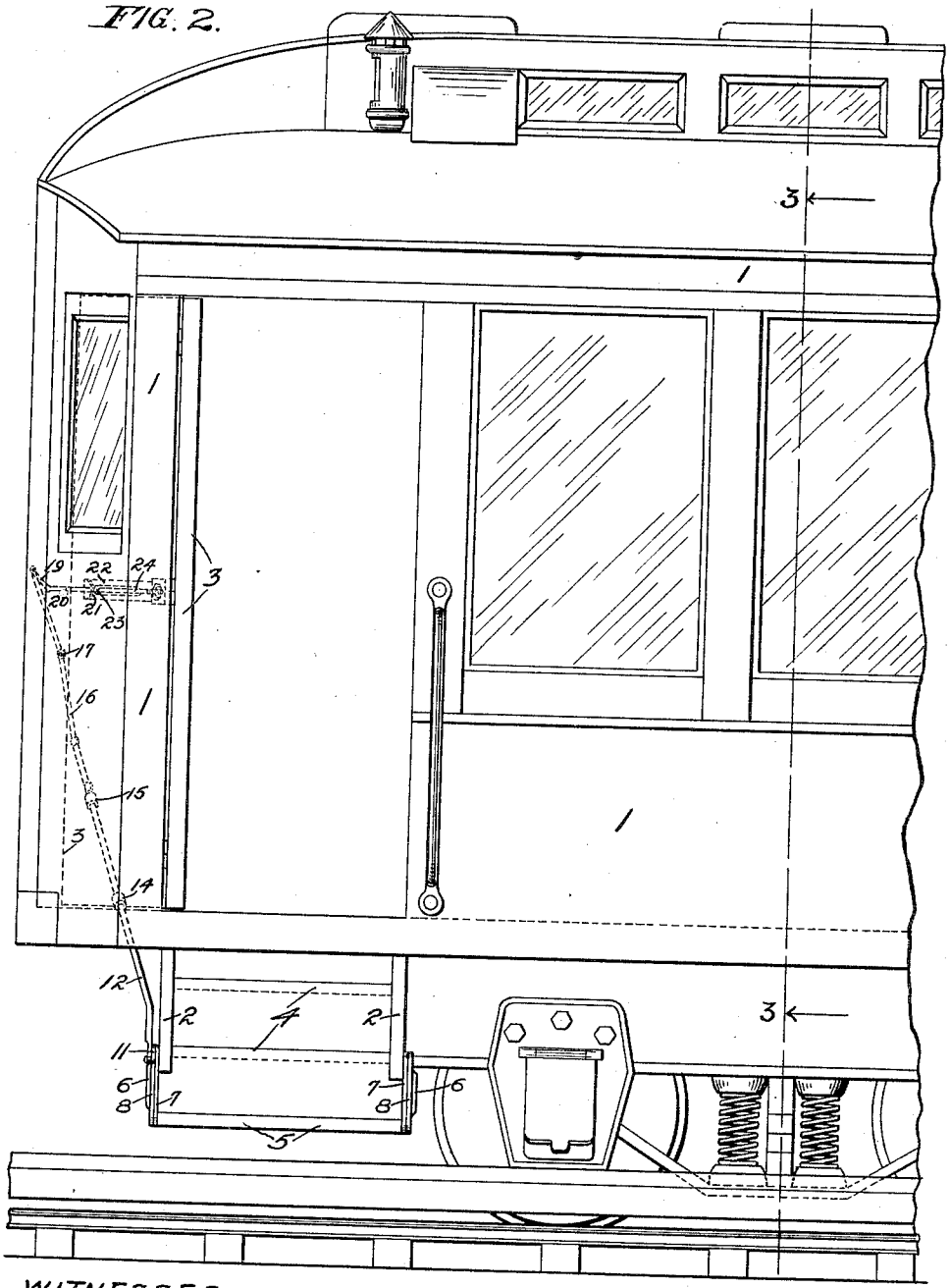
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4 SHEETS—SHEET 2.

FIG. 2.



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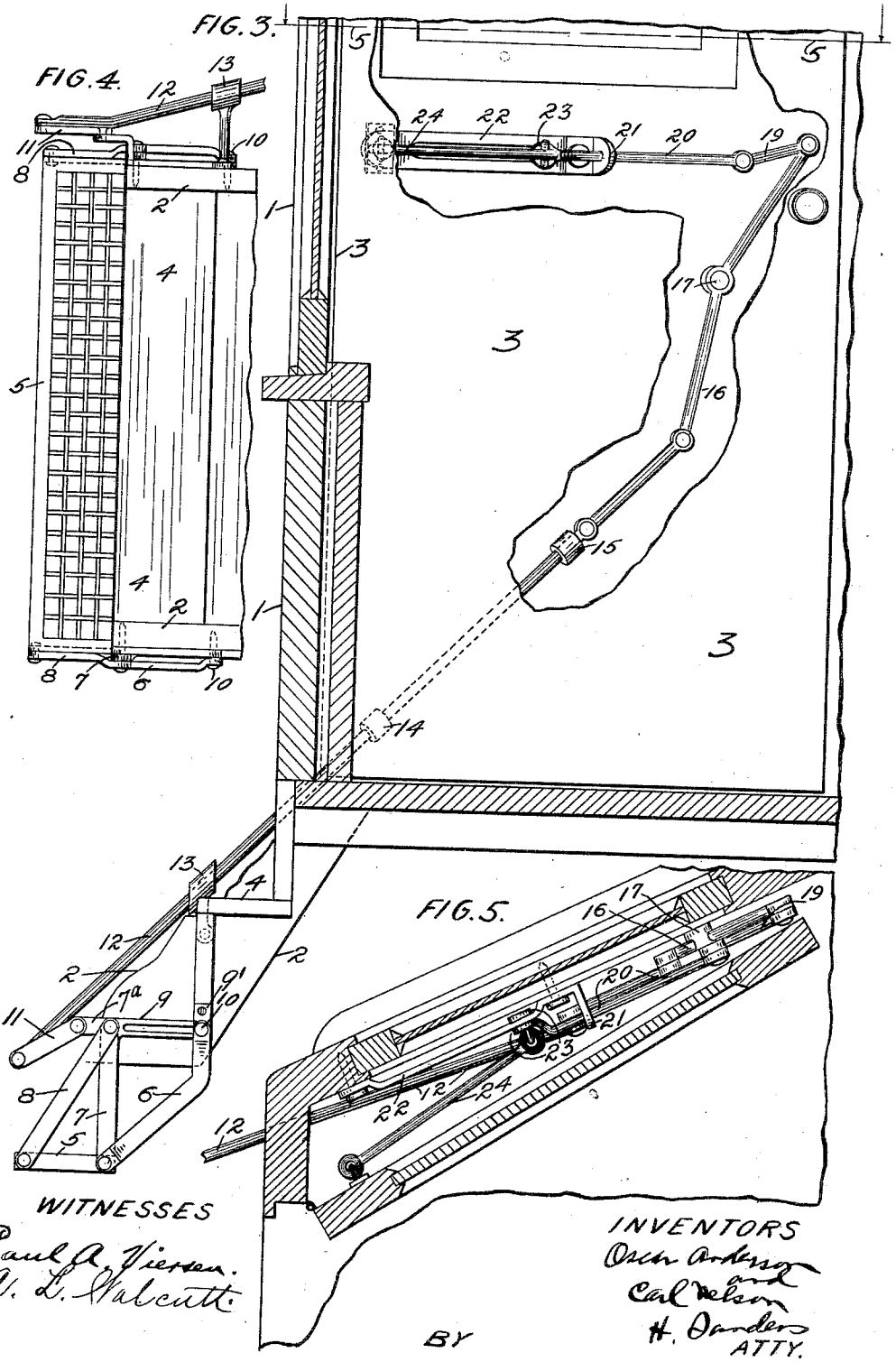
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4 SHEETS—SHEET 3.

FIG. 3.



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4 SHEETS—SHEET 4.

FIG. 6.

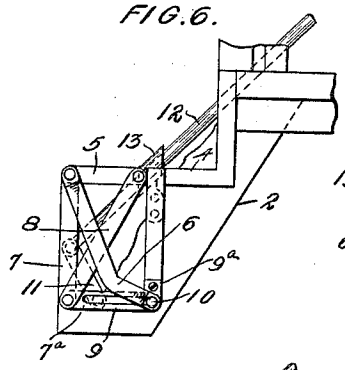


FIG. 7.

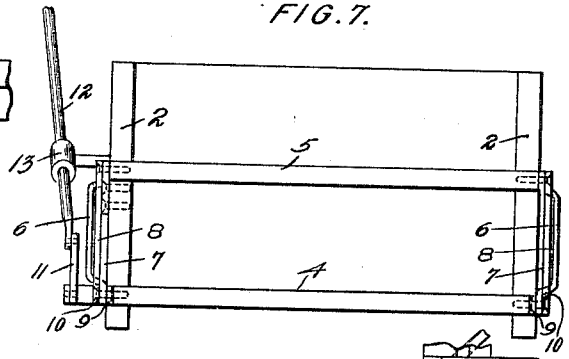


FIG. 8.

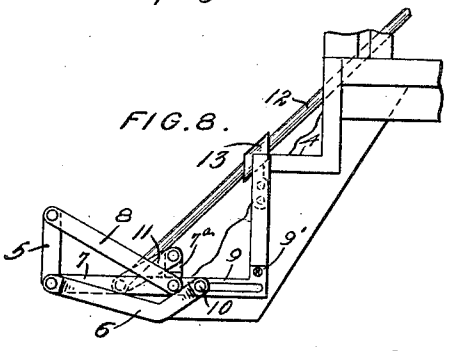


FIG. 9.

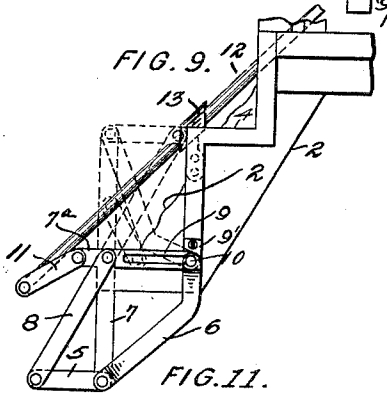


FIG. 10.

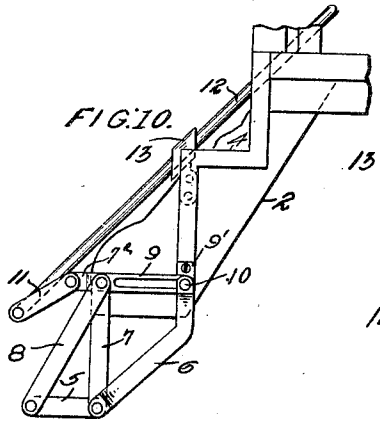
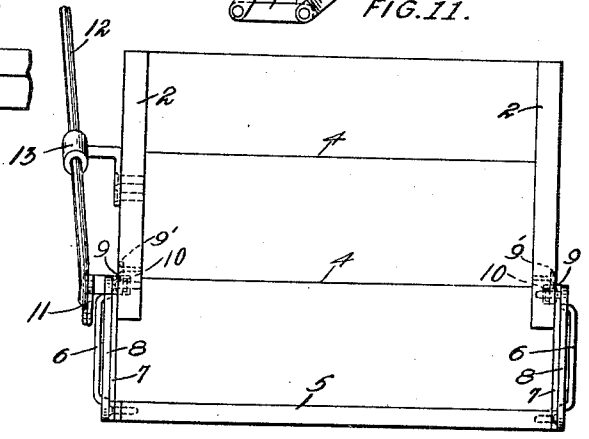


FIG. 11.



WITNESSES

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UNITED STATES PATENT OFFICE.

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CAR-STEP.

1,071,129. Specification of Letters Patent. Patented Aug. 26, 1913.

Application filed February 1, 1912. Serial No. 674,807.

To all whom it may concern:

Be it known that we, OSCAR ANDERSON and CARL NELSON, citizens of the United States, residing, respectively, at Chicago and Chicago Heights, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Steps, of which the following is a specification.

This invention relates to improvements in car steps and its object is to produce an extra step designed to be pivotally secured to the bottom step of a railway coach in order to obviate the necessity of the portable step or box now used and placed on the ground beneath the regular steps upon which the passengers may alight in the absence of a station platform. It is adapted for use especially on vestibuled cars and connection is provided between the door of the vestibule and the extra step whereby the opening of the former throws the latter into operative position and closing of this door throws the extra step into inoperative position. With slight modification it may also be used upon the non-vestibuled coaches.

It is a well known fact that the steps of the ordinary railway coach stop a considerable distance above the ground or rail level and many persons are injured in attempts to alight from or board such coaches.

With the foregoing and other objects in view the invention consists in the combination and arrangement of parts to be hereinafter fully described in the following specification, pointed out in the claims and illustrated in the accompanying drawings which form a part of the specification and in which—

Figure 1 is a sectional end elevation of a railway car provided with our extra car step showing its attachment with the vestibule door. Fig. 2 is a side elevation of this coach showing the application of our extra step. Fig. 3 is an end elevation of the coach in section, partly broken away to show the step operating mechanism, taken on line 3—3 of Fig. 2. Fig. 4 is a plan of the extra step. Fig. 5 is a sectional view taken on line 5—5 of Fig. 3. Fig. 6 is a side elevation of the car steps shown in Fig. 1 with the added step in inoperative position. Fig. 7 is a front elevation of Fig. 6. Fig. 8 is a view similar to Fig. 6 with the added step in an intermediate position. Fig. 9 is a side view of the steps with the added step shown in operative position in full lines and in inoperative position in dotted lines. Fig. 10 is a side elevation of the car step with the added step in operative position. Fig. 11 is a front view of Fig. 10.

Like reference characters indicate corresponding parts throughout the several views.

1 is an ordinary vestibuled railway coach provided with the regular steps 2 and vestibule door 3. To the bottom step 4 of the coach our extra step 5 is pivotally secured preferably in the following manner: To either side of the bottom step of the coach a link 6 is secured upon a pin 10 which link also engages the extra step 5 and a link 7 likewise connected to that step. 8 is a guide link connected to the extra step and to the top of the link 7 and both of the last named links are connected to a horizontal slotted link 9 secured to the riser of the steps 4 as at 9′ and in which link the pin 10 of the link 6 is movably secured. The angular termination 7^a of the link 9 carries a link 11 to which one end of an operating rod 12 is secured. The rod 12 passes through a guide 13 secured to one of the steps of the car, through the floor of the car behind the vestibule door 3, through guides 14 and 15 secured to the back of the vestibule and is connected to one end of a jointed rod 16 that is pivotally secured at 17 to the back of the vestibule. 19 is a link pivotally connecting the rod 16 with a rod 20 which rod passes through the out-turned apertured end 21 of a slotted guide 22 secured to the end of the vestibule. 23 is a button to which the end of the rod 20 is secured and which is adapted to ride in the slotted portion of the guide 22. The button 23 is further provided with a ring for engagement with one end of a rod 24 the opposite end of which is connected to the vestibule door 3.

Operation: In Figs. 3, 5, 9, 10 and 11 the extra step is shown in operative position when the door, not shown in the last three figures mentioned, will be open. When the door is closed the following operation takes place: The rod 24 with button 23 attached is drawn to the opposite end of the slotted portion of the slide 22 which will oscillate the jointed rod 16 on its pivot thus drawing the rod 12 into the car and through the medium of links 11 oscillating angular links 7, step 5, links 8 and links 6 past the inter-

mediate position shown in Fig. 8 in which the pin 10 is shown to have moved to the opposite end of the slotted portion of link 9, and finally into the position shown in full lines in Figs. 1, 6 and 7 where the added step is shown in inoperative position. Opening the door will, of course, reverse the operation and again throw the extra step into operative position.

What is claimed is:—

1. The combination with a vestibuled car having steps and a vestibule door, of slotted links secured to the riser of the bottom car step, movable links carried by pins disposed in the said slotted links, an extra car step pivotally secured to said movable links, angular connecting links between said extra car step and bottom car step, guide links connecting said extra car step and bottom car step, a slotted guide secured to the back of the car vestibule, a rod secured to the vestibule door, a rod passing through a portion of said slotted guide, means for connecting the two named rods slidably mounted in the slotted portion of the said guide, a linked rod pivotally secured to the back of the car vestibule and engaging one of the aforesaid rods and a rod secured to the said linked rod and operatively connected to one of the aforesaid angular links.

2. The combination with a vestibuled car having steps and a vestibule door, of an extra step pivotally connected to the bottom car step, a slotted guide formed with an out-turned extremity secured to the back of the car vestibule, a rod secured to the vestibule door, a rod passing through the out-turned extremity of the said slotted guide, means for connecting the two named rods slidably mounted in the slotted portion of the said guide, a linked rod pivotally secured to the back of the car vestibule and engaging one of the aforesaid rods and a rod connecting the said linked rod and the aforesaid extra step for oscillating the latter upon its pivoted supports.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two subscribing witnesses.

OSCAR ANDERSON.
CARL NELSON.

Witnesses:
A. L. WALCUTT,
A. F. RINDLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."