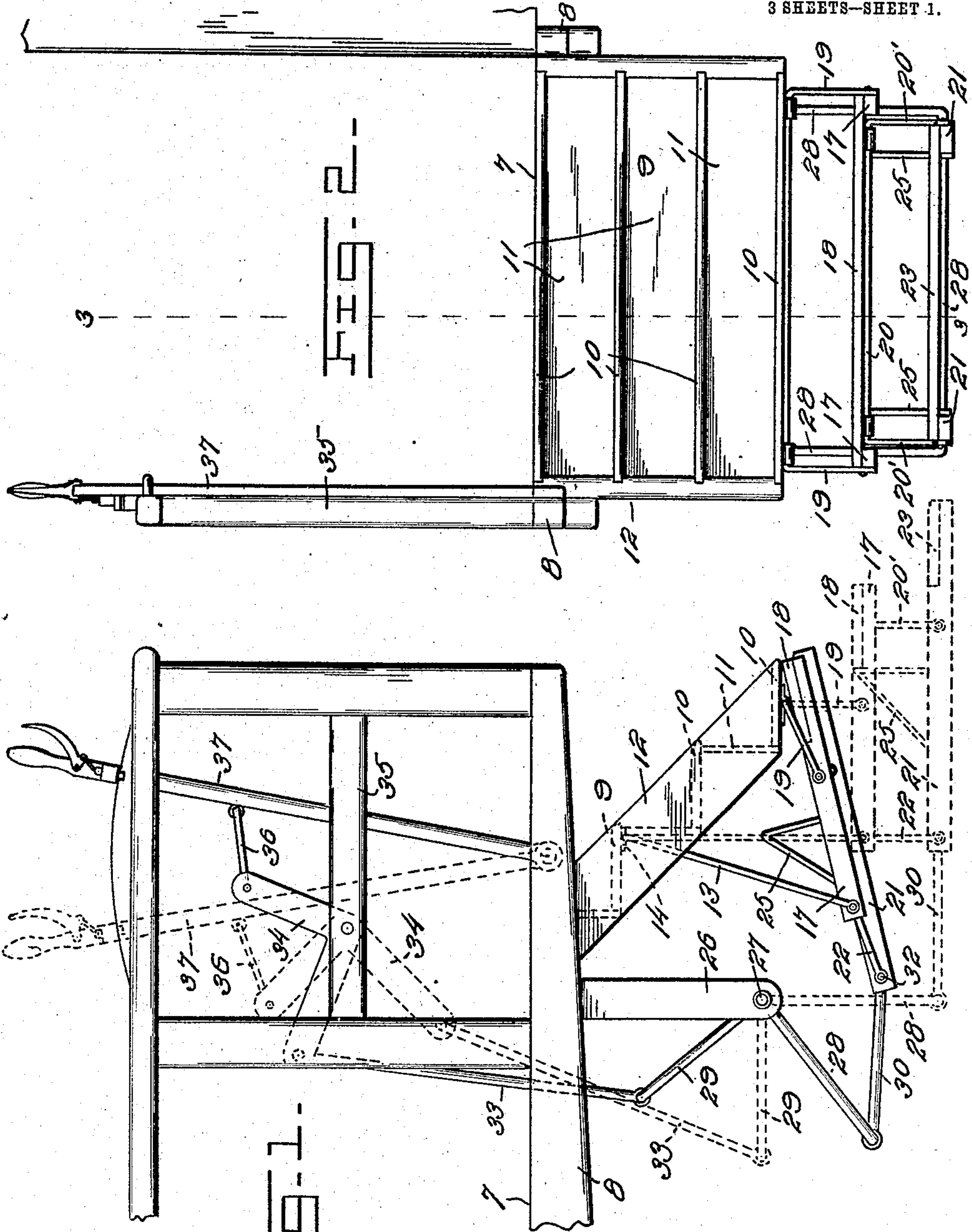


A. SHOOPMAN.
FOLDING CAR STEP ATTACHMENT.
APPLICATION FILED SEPT. 28, 1908.

908,043.

Patented Dec. 29, 1908.

3 SHEETS—SHEET 1.



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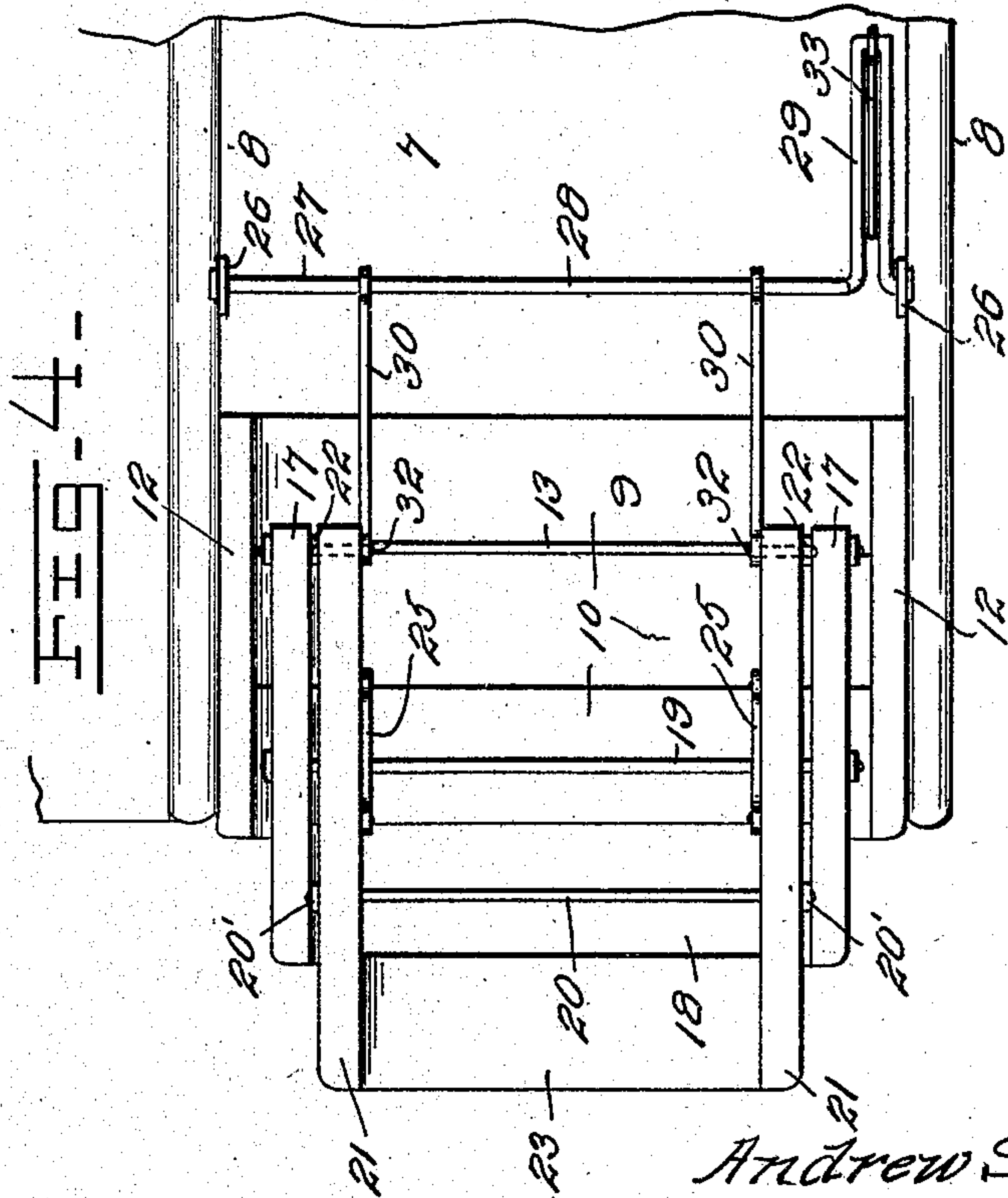
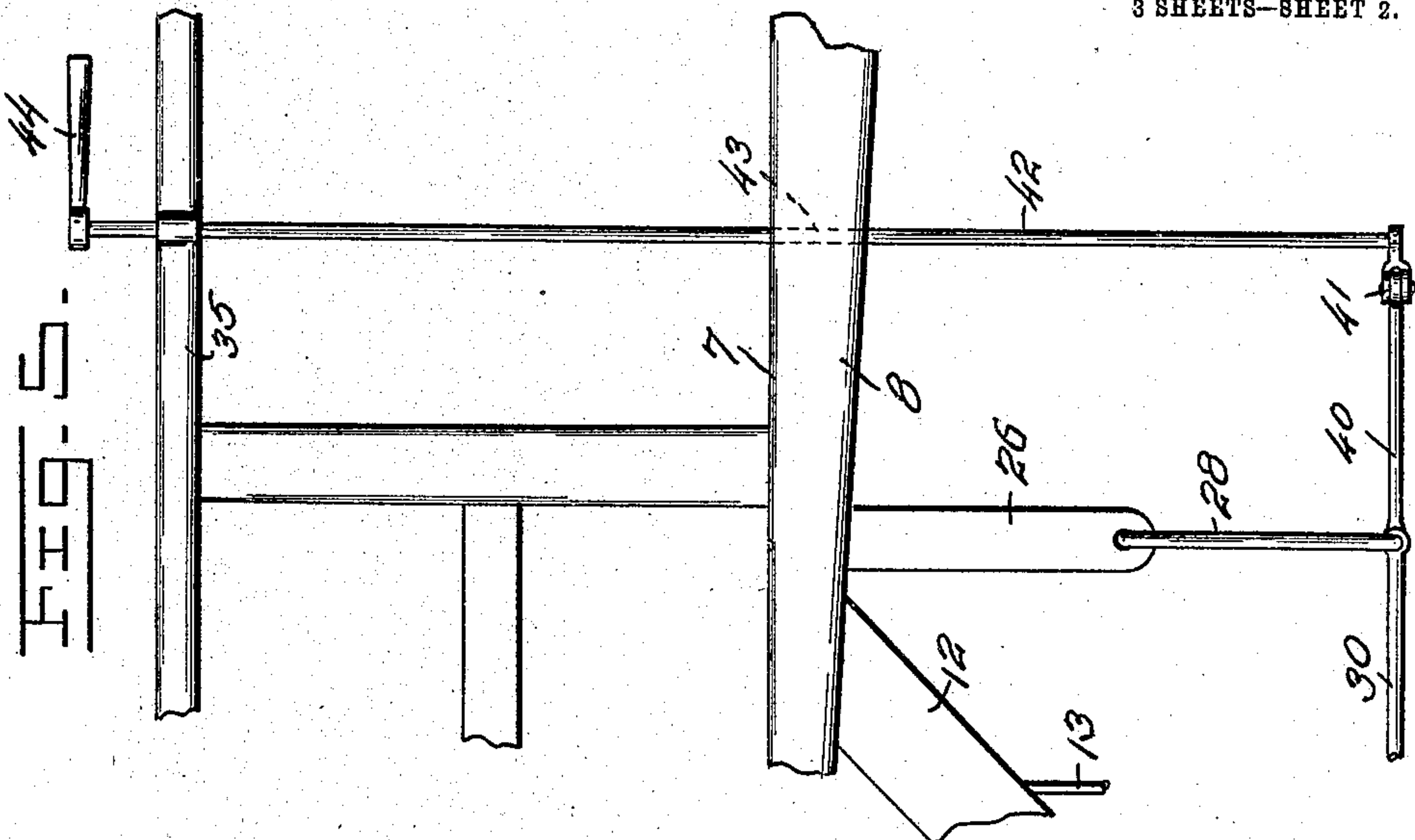
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3 SHEETS—SHEET 2.



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3 SHEETS-SHEET 3.

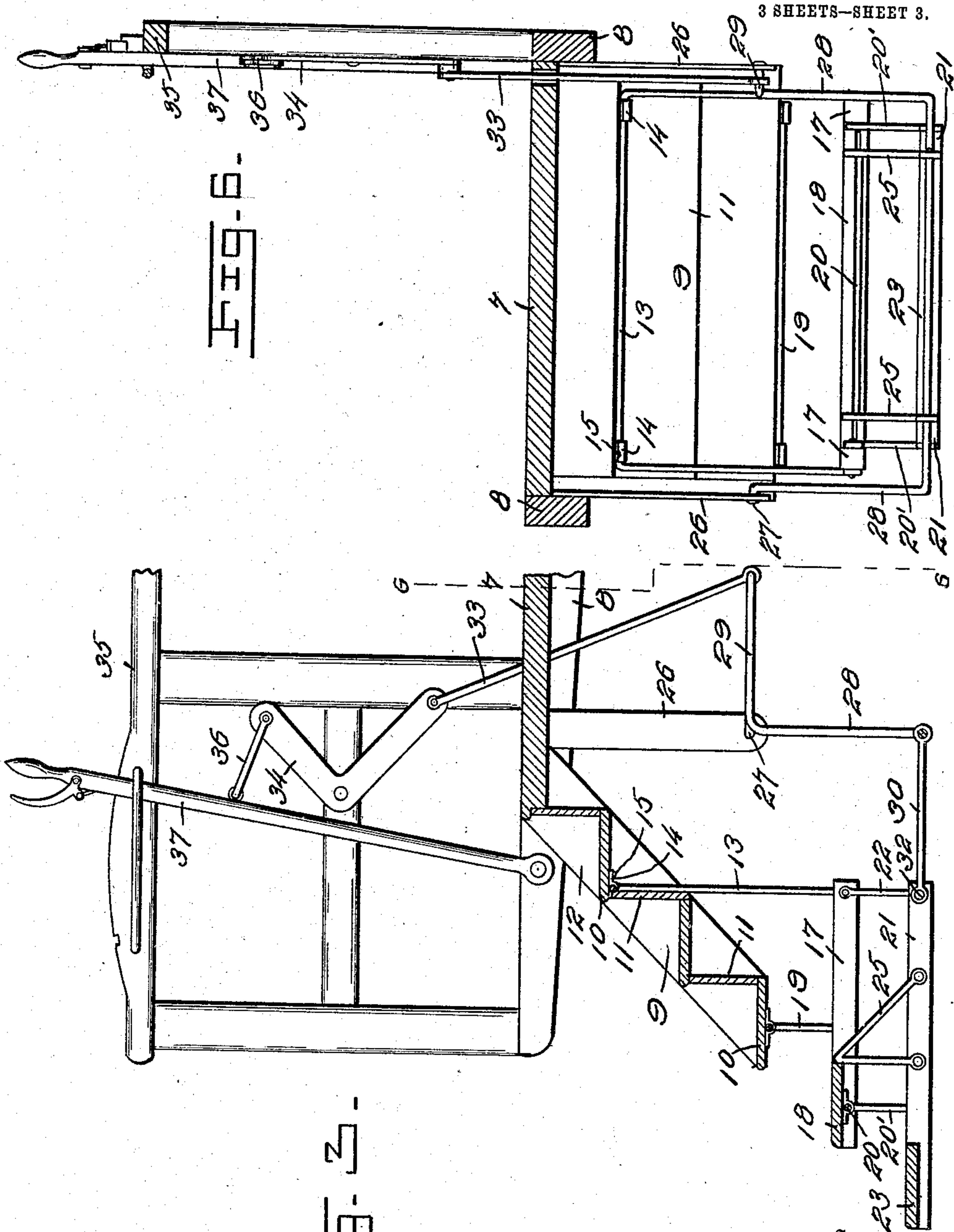


FIG. 2.

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UNITED STATES PATENT OFFICE.

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FOLDING CAR-STEP ATTACHMENT.

No. 908,043.

Specification of Letters Patent.

Patented Dec. 29, 1903.

Application filed September 23, 1903. Serial No. 455,002.

To all whom it may concern:

Be it known that I, ANDREW SHOOPMAN, a citizen of the United States, residing at Duke, in the county of Jackson and State of Oklahoma, have invented certain new and useful Improvements in Folding Car-Step Attachments, of which the following is a specification.

This invention relates to railway cars and more particularly to steps therefor, and has for its object to provide an arrangement including auxiliary steps for use in connection with the car steps of usual form, so arranged that they may be easily and quickly moved into and out of operative position, thus doing away with the use of step boxes ordinarily employed at stations and depots.

Another object is to provide a structure which will be relatively simple and which may be easily installed.

Other objects and advantages will be apparent from the following description and it will be understood that changes in the specific structure may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings forming a portion of this specification and in which like numerals of reference indicate similar parts in the several views, Figure 1 is an end view of a portion of a railroad car with the present step arrangement applied thereto, the steps being shown in folded position and being indicated in operative position in dotted lines, Fig. 2 is a view taken at right angles to Fig. 1, the steps being in operative position, Fig. 3 is a transverse section of the platform taken on line 3—3 of Fig. 2, Fig. 4 is a bottom plan, Fig. 5 is an elevational view similar to Fig. 1, showing a different form of lever, Fig. 6 is a view taken on line 6—6 of Fig. 3, showing the mechanism in rear elevation.

Referring now to the drawings, there is shown a car platform 7, including the rearward transverse beam 8 and the usual steps 9. The steps include the treads 10 and risers 11, and the usual diagonal side members 12. A supporting yoke 13 is pivoted at its bight to the underside of the uppermost step tread 10, by means of straps 14, which have their outer ends engaged between the tread 10 and the riser 11 which is attached thereto. The inner ends of these straps are secured by suitable fasteners 15.

The legs of the yoke 13 extend downwardly to a plane below the tread of the

lowermost step, where they are pivoted against the outer faces of horizontal parallel members 17, which have a supplemental step 18 secured upon their forward portions.

A second yoke 19 is pivoted to the under face of the lowermost step 10, and has its legs extended downwardly from the step, and pivoted against the outer faces of the members 17, adjacent to the forward ends thereof. The arrangement is thus such that the members 17 may be moved longitudinally, and it will be seen that outward movement of these members will also cause them to be moved downwardly, by reason of the arrangement of the yoke 19, so that the members when at the inward limit of their movement lie with their step 18 against the under face of the lowermost step 10, and when at the outward limit of their movement, they lie with the step 18 outwardly of the lowermost step 10 and in spaced relation thereto, for coöperation with the steps 10 as will be understood.

A supporting yoke 20, similar to the yoke 19, is pivoted to the under surface of the step 18, and has its depending legs 20' pivoted against the outer faces of a second pair of parallel horizontal members 21, the rearward portions of these members being supported by links 22 pivoted to the outer faces of these members and also to the inner faces of the members 17. It will thus be seen that longitudinal movement of the members 21 will bring them into position to lie at times with their upper portion between the members 17 and with a step 23 which is carried by their forward portions, against the under face of the step 18. The members 21 will lie in this position when at the rearward limit of their movement, and will lie in spaced relation to the members 17 and with the step 23 projected outwardly beyond the step 18, when the members are at the outward limit of their movement.

It will be observed that, when the members 17 have been moved downwardly and outwardly, as just described, their outward movement will be limited by the rise 11 which rise is just below the uppermost step 10, the legs of the yoke 13 coming into engagement with this rise as will be understood, and as will be seen from the drawings. The outward limit of movement of the second horizontal members 21 is determined by upwardly extending members 25, which are secured to the inner faces of the members

21, and which are located in position to engage the rearward edge of the steps 18.

A pair of hangers 26 are connected with the platform 6, and depend therefrom, and these hangers have a crank shaft 27 engaged pivotally at its ends therein. This crank shaft includes a downwardly directed crank 28, and a rearwardly directed crank 29. The downwardly directed crank is connected by means of links 30 with the rearward portion of the members 21, the connection of these links with the members being through the medium of pivot bolts 32 which also connect the links 22 with the members 21.

The rearwardly extending crank 29 has an upwardly extending link 33 connected therewith, and this link is pivoted to an angle lever 34 which is mounted upon the hand rail 35 of the platform. This angle lever is connected by means of a pivoted rod 36 with a vertically extending hand lever 37, pivoted to the beam 8 outwardly of the step 9 and movable to shift the angle lever upon its pivot. As shown, the hand lever 37 is provided with a rack and dog mechanism to hold the lever in different positions.

As will be seen from the drawings, rearward movement of the hand lever 37 will cause the angle lever 34 to move upon its pivot, the crank shaft being rocked to move its downwardly extending crank 28 forwardly which, through the medium of the links 30 will project the members 17 and 21 outwardly to bring the steps 18 and 23 into operative position. The reverse movement of the hand lever will of course return the steps to inoperative position.

In Fig. 5 of the drawings, there is shown a form of the invention in which a link 40 is connected with the cranks 28, the crank 29 not being used with this modification, and has a ball and socket connection indicated at 41 with a vertically extending lever 42 revolvably mounted in the platform as shown at 43 and connected with a hand lever 44.

What is claimed is:—

1. In a structure of the class described, the combination with steps, of depending members pivoted to the steps for movement to shift their lower ends horizontally, horizon-

tal members pivoted to the lower ends of the supporting members, an auxiliary step carried by the outer ends of the horizontal members, depending supporting members pivoted to the said horizontal members for movement to shift their lower ends longitudinally of said horizontal members, a second pair of horizontal members pivoted to the lower ends of the second named supporting members, a second auxiliary step carried by the second named horizontal members, and means for shifting the horizontal members.

2. In a structure of the class described, the combination with car steps, of a yoke pivoted at its bight to one of said car steps and having its legs extending downwardly, said yoke being movable to shift the lower ends horizontally, a pair of horizontal parallel spaced members pivoted to the lower ends of the legs of the yoke, a step carried by said horizontal members, for movement with said members into and out of position to cooperate with the first named steps, a yoke pivoted to the under face of the auxiliary steps and having downwardly extending legs movable horizontally, depending horizontally movable links pivoted to the rearward portion of said horizontal members, a second pair of horizontal members pivoted to the lower ends of the legs of the second named yoke and to the lower ends of the links for movement to lie at times between the lower portions of the first named horizontal members and at times below said members and with their outer ends projected outwardly beyond said first named horizontal members, a second auxiliary step carried by the outer ends of the second horizontal members, means for engagement of the first named auxiliary step to limit the movement of the second named horizontal members, and means for moving the various portions upon their pivots.

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

ANDREW ^{his}(X) SHOOPMAN.
mark

Witnesses:

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J. G. WALDROP.