

No. 864,848.

PATENTED SEPT. 3, 1907.

R. M. LAMB.
PIVOTED CAR STEP.
APPLICATION FILED DEC. 24, 1906.

2 SHEETS—SHEET 1.

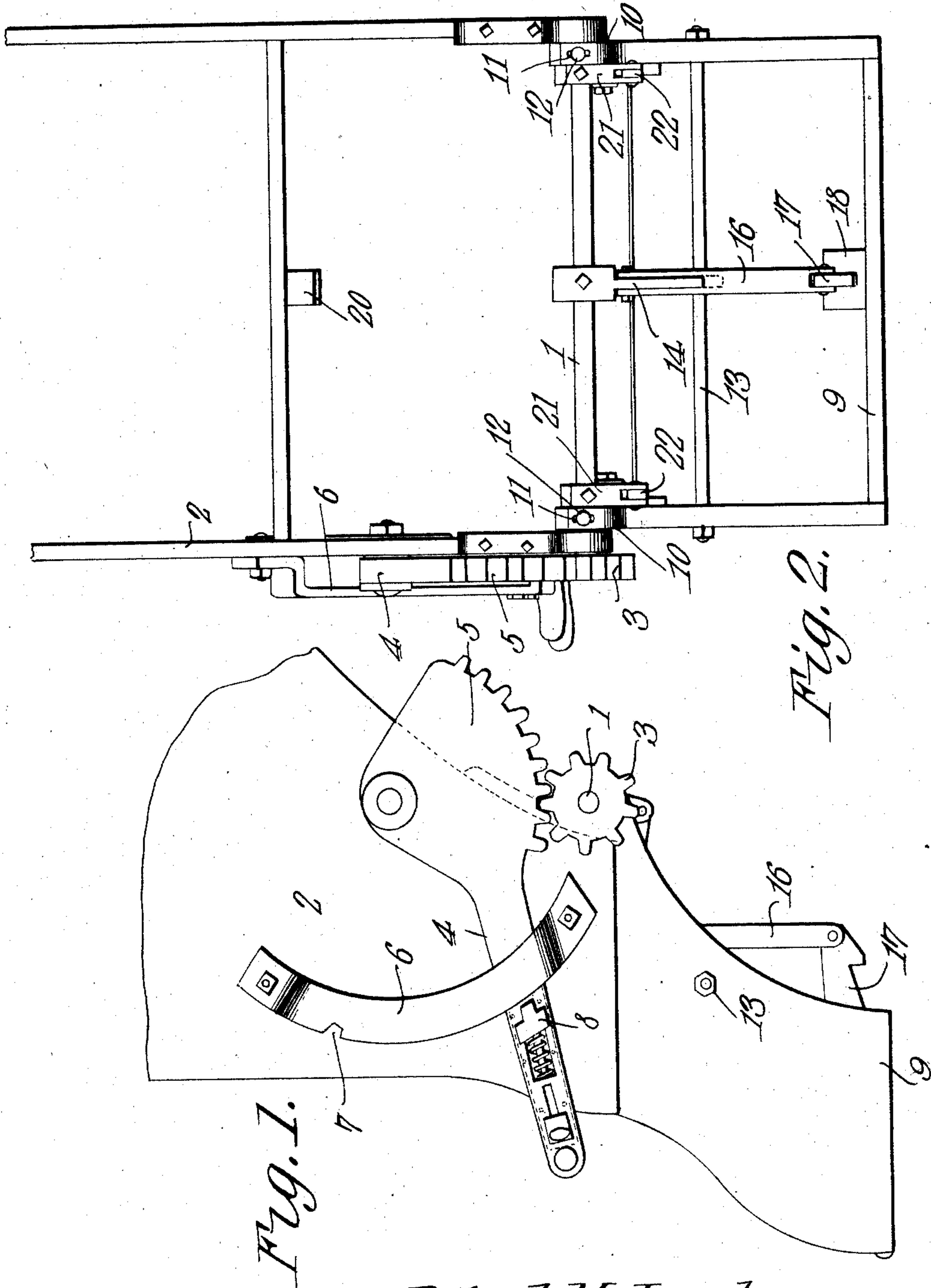


Fig. 1.

Fig. 2.

WITNESSES:
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C. Pradway

Robert M. Lamb, INVENTOR
By *C. A. Snow & Co*
ATTORNEYS

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2 SHEETS—SHEET 2.

Fig. 3.

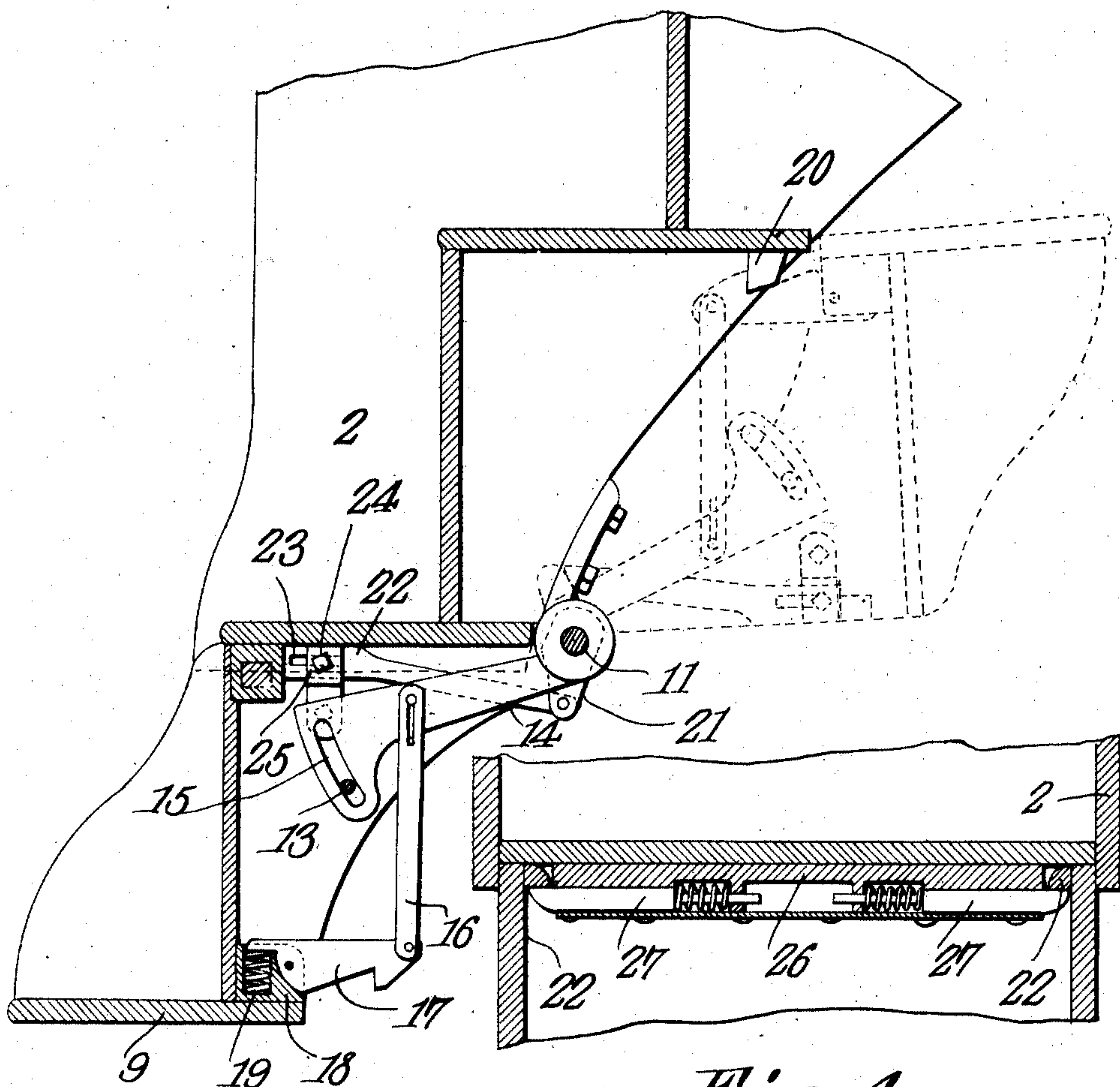


Fig. 4.

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UNITED STATES PATENT OFFICE.

ROBERT MITCHELL LAMB, OF WOODBINE, GEORGIA.

PIVOTED CAR-STEP.

No. 864,848.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed December 24, 1906. Serial No. 349,322.

To all whom it may concern:

Be it known that I, ROBERT MITCHELL LAMB, a citizen of the United States, residing at Woodbine, in the county of Camden and State of Georgia, have invented a new and useful Pivoted Car-Step, of which the following is a specification.

This invention has relation to pivoted car steps and it consists in the novel construction and arrangement of its parts as hereinafter shown and described.

10 The object of the invention is to provide a supplemental step which is pivoted to the usual steps of a railway car and which is adapted to be swung down and used in combination with the regular steps to avoid the necessity of placing and handling platform stools. When not in use the step may be swung up and retained out of the way thus avoiding obstacles which might be presented or encountered along the way.

15 The device consists primarily of a shaft which is journaled at the lower end of a stair casing and the said pivoted step is fixed to said shaft and swings as the same rotates. The shaft is provided at its rear end with a gear wheel which meshes with a gear segment carried by a lever which is fulcrumed to the rear side of the stair casing. A spring actuated pawl is carried by said lever and enters a notch provided in a guide when the step is to be maintained in elevated position. A catch is provided for holding the step in elevated position, also catches are provided for holding the step in lowered position. Means is provided for liberating the step from the said catch mechanism just in advance of turning or swinging the same.

20 In the accompanying drawing:—Figure 1 is a rear edge elevation of the steps showing the pivoted step in its lowermost position. Fig. 2 is a rear side elevation of the same. Fig. 3 is a vertical sectional view of the same and Fig. 4 is a detailed sectional view of a catch for the pivoted step.

25 The shaft 1 is journaled at the lower end of the stair casing 2. Said shaft is provided at its end and upon the rear side of said casing with a gear wheel 3 which is fixed to the shaft. The lever 4 is fulcrumed to the rear side of the casing 2 and is provided with a gear segment 5 which meshes with the gear wheel 3. The segmental guide 6 lies over the lever 4 and is provided near its upper end with a notch 7. The spring actuated pawl 8 is mounted upon the lever 4 and is adapted to enter the notch 7 when the lever 4 is in its highest position. The supplemental step 9 is mounted at the upper ends of its sides to the said shaft 1 and is arranged to swing in a vertical plane below the fixed steps. The bearings 10 of the supplemental step are provided with the elongated slots 11 which receive the pins 12, which in turn are fixed to the shaft 1. Consequently the said supplemental step does not swing positively with the rotation of the shaft 1 until the pins 12 arrive at the ends of the slots 11. The cross-rod 13 is attached at its

end to the sides of the supplemental step. The arm 14 is fixed to the shaft 1 and is provided with an elongated opening 15 which receives the rod 13. Said opening 15 is disposed in an arc with the shaft 1 as a center. The link 16 is pivoted at one end to the arm 14 and at its opposite end to a catch 17. The said catch 17 is pivotally attached to the casting 18 which is mounted upon the upper side of the supplemental step. The spring 19 is located in the said casting 18 and bears against the end of the catch 17. The tension of the said spring is such as to have a tendency to maintain the opposite end of the said catch in its lowermost position. The keeper 20 is attached to the under side of the second fixed step from the lower end of the stair casing and is in the path of the catch 17 and when the supplemental step is swung up as will be hereinafter explained the said catch 17 engages the keeper and retains the supplemental step in elevated position.

30 The collars 21 are fixed to the shaft 1 and the bolts 22 are pivoted to the said collar. Said bolts are provided with elongated slots 23 which receive the pins 24 which pass transversely through the lugs 25 and the sides of the supplemental step. A casing 26 is fixed to the under side of the lower fixed step and is provided with the spring actuated keepers 27, the ends of which project beyond the ends of the casing 26. The said keepers 27 are located in the paths of the ends of the bolts 22 and when engaged by the said bolts retreat within the casing 26 and when cleared by the bolts are moved into extended positions by their actuating springs and pass below the bolts and hold the swinging steps in fixed lowered position.

35 Presuming that the swinging step is in its uppermost position in order to lower the same it is necessary that the operator grasp the free end of the lever 4 and withdraw the end of the spring actuated pawl 8 from the notch 7 of the guide 6. Then the free end of the said lever is swung down and the engagement of the gear segment 5 with the gear wheel 3 causes the shaft 1 to rotate. By reason of the fact that the pins 12 are located in the elongated slots 11 of the bearings 10 the supplemental step does not move with the initial movement of the said shaft, but the arm 14 does move as soon as does the said shaft. Consequently the elongated opening 15 moves transversely of the cross rod 13 and when the end of the said opening comes in contact with the said cross-rod the link 16 has been moved longitudinally and the catch 17 has been moved upon its pivot against the tension of the spring 19 until the said catch has been swung out of the path of the keeper 20, at which time, the pins 12 have arrived at the ends of the slots 11 and the said swinging step then moves positively with the shaft 1 and is lowered under the fixed steps.

In order to elevate the swinging step the lever 4 is swung up which rotates the shaft 1 in the direction op-

posite to that above indicated. As above described, the swinging step does not move in unison with the initial movement of said shaft but said collars being positively fixed to the shaft turn with the same and
5 move the bolts 22 longitudinally from under the keepers 27; consequently when the pins 12 arrive at the ends of the elongated slots 11 in the bearings 10 and the elongated opening 15 of the arm 14 at its end comes in contact with the rod 13, the said swinging step is
10 moved into elevated position. When the catch 17 engages the keeper 20 the spring actuated pawl 8 enters the notch 7 of the guide 6 and the parts are locked in the positions indicated.

Having described my invention what I claim as new
15 and desire to secure by Letters-Patent is:—

1. In combination with a stair casing, a swinging step comprising a shaft journaled to the stair casing, means for rotating said shaft, a swinging step mounted upon the shaft, an arm mounted upon the shaft and having an
20 elongated slot, a cross-rod attached to the sides of the

swinging step and passing through said slot, means for retaining said swinging step in fixed positions at the extremes of its movement one of said means being connected with said arm and the other with the shaft whereby one retaining means is operated at the initial movement of the shaft and the other at the initial movement of the arm. 25

2. In combination with a stair casing, a swinging step comprising a shaft journaled to the casing, means for rotating said shaft, a swinging step mounted upon the shaft and having elongated openings in its bearings, pins at- 30 tached to the shaft and being located in said openings, and adapted to actuate the step when they come in contact with the ends of the openings, means for retaining the said swinging step in its extreme positions and means connected with the shaft for operating the said retaining 35 means at the initial movement of the shaft.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ROBERT MITCHELL LAMB.

Witnesses:

G. W. BRANDON,
J. S. N. DAVIS, Jr.