No. 778,190. PATENTED DEC. 20, 1904.

J. A. HALBROOK.

EXTENSION CAR STEP.

APPLICATION FILED JAN. 18, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

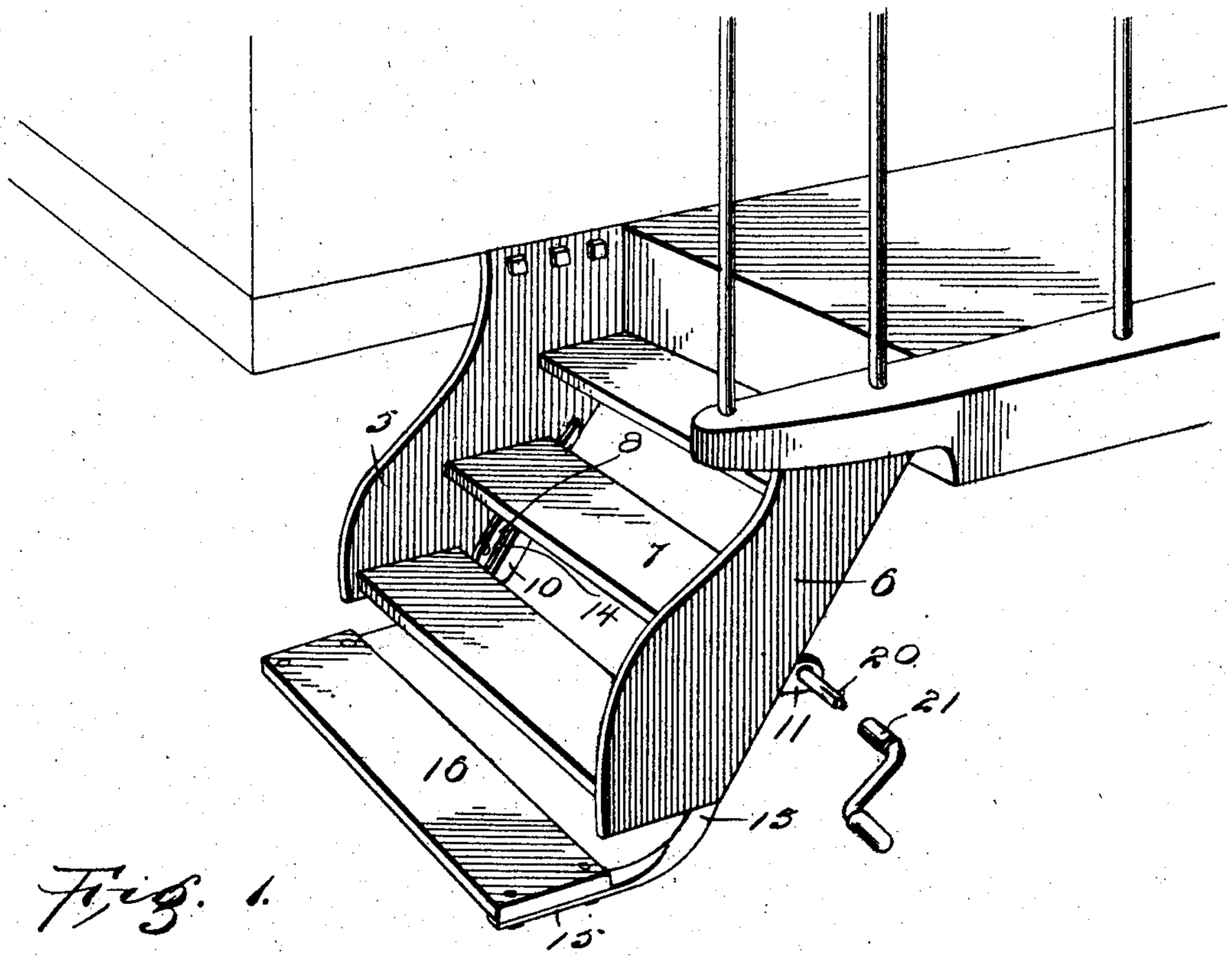

Fig. 1.

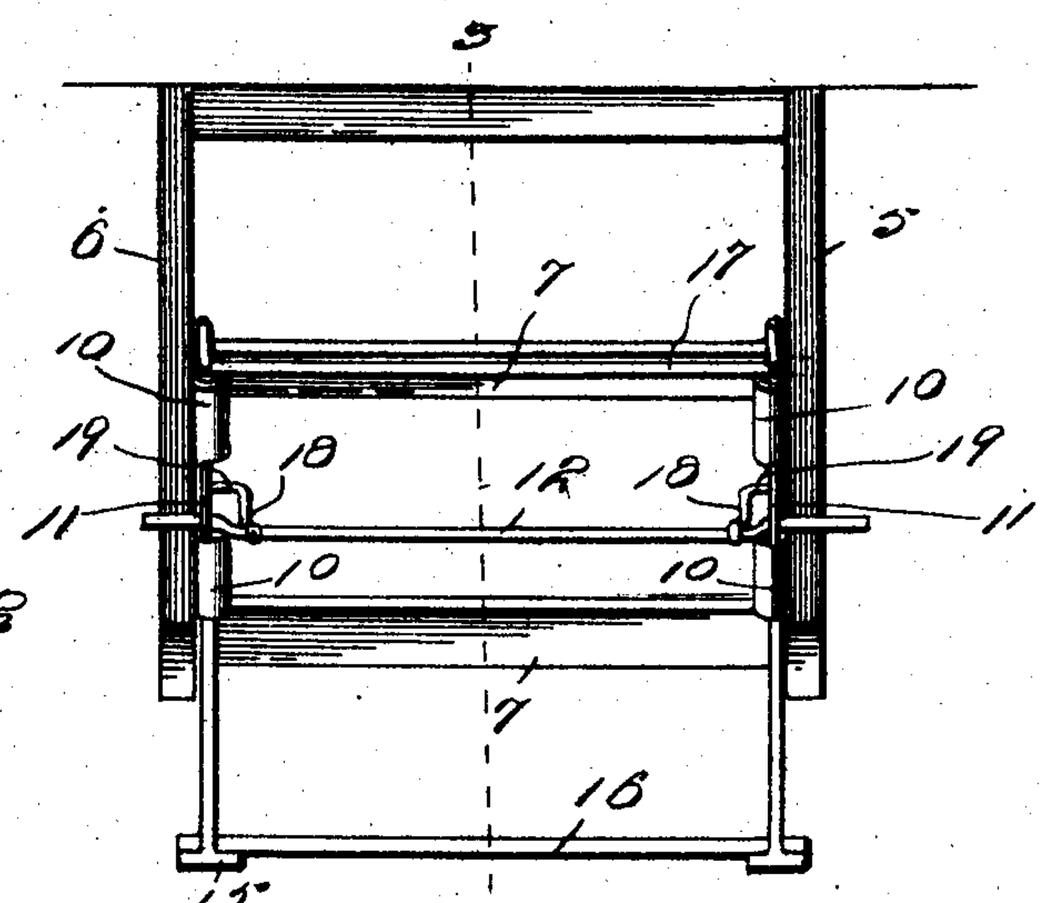

Fig. 2.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

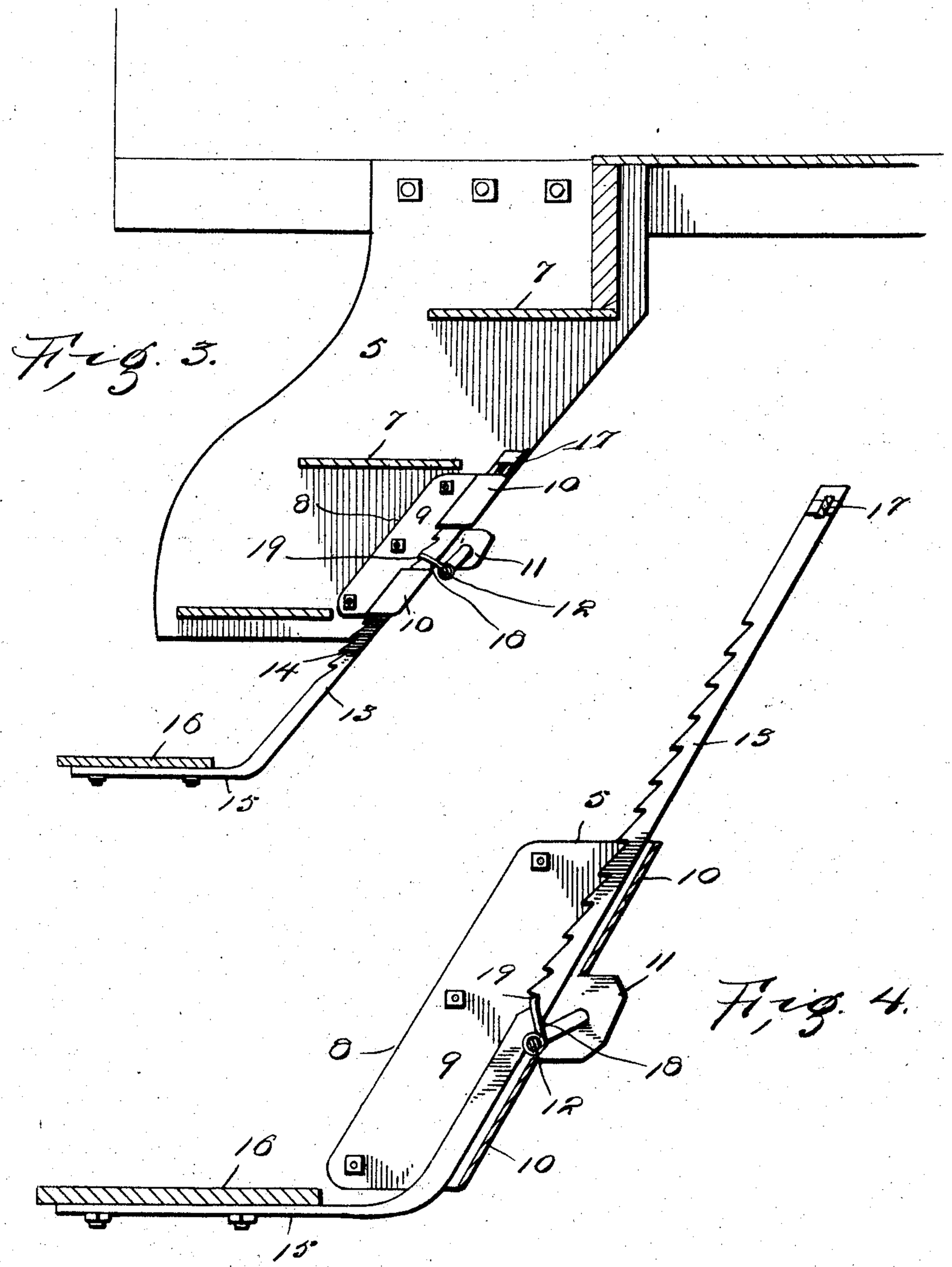

Fig. 4.

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UNITED STATES PATENT OFFICE.

JOSEPH A. HALBROOK, OF BRIDGEPORT, WASHINGTON.

EXTENSION CAR-STEP.

SPECIFICATION forming part of Letters Patent No. 778,190, dated December 20, 1904.

Application filed January 18, 1904. Serial No. 189,582.

To all whom it may concern:

Be it known that I, JOSEPH A. HALBROOK, a citizen of the United States, residing at Bridgeport, in the county of Douglas, State of Washington, have invented certain new and useful Improvements in Extension Car-Steps; and I do hereby 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.

This invention relates to steps, and more particularly to the kind used on railroad-cars, and has for its object to provide a construction in which the steps will include an extensible member which may be lowered to form an additional step, thus doing away with the boxes which are usually employed to enable passengers to board a train.

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 a perspective view of a portion of a car-platform, showing the steps provided with the present invention. Fig. 2 is a rear elevation of the steps. Fig. 3 is a section on line 3 3 of Fig. 2, showing the movable step in its lowered position. Fig. 4 is a detail sectional view of one of the guides and the fastening mechanism.

Referring now to the drawings, there is shown a pair of steps comprising the usual side portions 5 and 6, having secured therebetween the treads 7. To the inner faces of the sides at their rearward edges there are secured a pair of hangers 8, each comprising an attaching-plate 9, by which it is secured to the side, and a pair of sleeves 10, having a space therebetween. From the edge of the attaching-plate between the sleeves there extends a bracket 11, having a perforation therethrough for the reception of the end of a crank-rod 12, the remaining end of which is disposed in a similar perforation in the bracket of the remaining hanger. Within the sleeves of each bracket there is disposed a bar 13, which has a series of downwardly-directed rack-teeth 14 along its inner edge, and each of these bars 13 is flattened at its lower end, as shown at 15. To the flattened portions of both bars there is secured a step 16, and the upper ends of the bars are connected by a cross-brace 17. To the crank-rod 12 there are attached a pair of arms 18, which have laterally-projecting fingers 19 at their ends, and these fingers lie normally in engagement with the rack-teeth 14 of the bars to prevent the latter from sliding downwardly in the sleeves 10.

One end of the rod 12 has an angular portion 20 to receive the eye of a crank 21, by means of which the rod may be moved in the brackets.

In operation when it is desired to lower the step 16 the crank is engaged with the rod 12, and the rod is moved to bring the fingers 19 out of engagement with the teeth 14, when the weight of the step will cause it to move downwardly until the cross-brace 17 rests upon the upper ends of the hangers 8. When it is desired to return the step to its original position, it is but necessary to give it an upward movement, which may be done with the foot or the hand, when the fingers 19, being relieved of their weight, will engage the teeth 14 and hold the bars of the step against downward movement. If desired, the fingers may be provided with weights 21 to insure their engagement with the teeth.

In practice modifications of the specific construction shown may be made, and any suitable materials and proportions may be used for the various parts without departing from the spirit of the invention.

What is claimed is—

1. The combination with a pair of steps comprising sides and connecting-treads, of plates secured to the sides and having perforations therethrough, guides secured to said plates, bars having downwardly-directed rack-teeth thereon slidably disposed in the guides, a tread secured to the lower ends of the bars, a rod having its ends engaged in the perforations of the plates, and dogs secured to the rod for engagement of the rack-teeth of the bars, said rod being arranged for movement in the perforations to disengage the dogs from the rack-teeth to permit of movement of the bars in the guides.

2. The combination with a pair of steps comprising sides and connecting-treads, of plates secured to the sides and having perforations

therethrough, guides secured to said plates, bars having downwardly-directed rack-teeth thereon slidably disposed in the guides, a tread secured to the lower ends of the bars, a rod having its ends engaged in the perforations of the plates, said rod having an offset portion, and dogs secured to said offset portion for engagement of the rack-teeth of the bars, to prevent downward movement thereof, one end of said rod being arranged for the engagement of a crank to move the former to disengage the dogs from the rack-teeth.

3. The combination with a pair of steps comprising sides and connecting-treads, of plates secured to the sides and having perforations therethrough, guides connected to said plates, bars slidably disposed in the guides, a tread secured to the lower ends of the bars and movable with the bars to lie at times against the under face of the lowermost of the first-named treads, and at times spaced therefrom, a cross-brace connecting the upper ends of the bars and arranged to lie upon the upper ends of the guides when the tread is in its second-named position, means for holding said cross-brace spaced from the upper ends of the guides, and means for disengaging the holding means.

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

JOSEPH A. HALBROOK.

Witnesses:

T. P. HOPP,

S. D. JANDERS.