

(No Model.)

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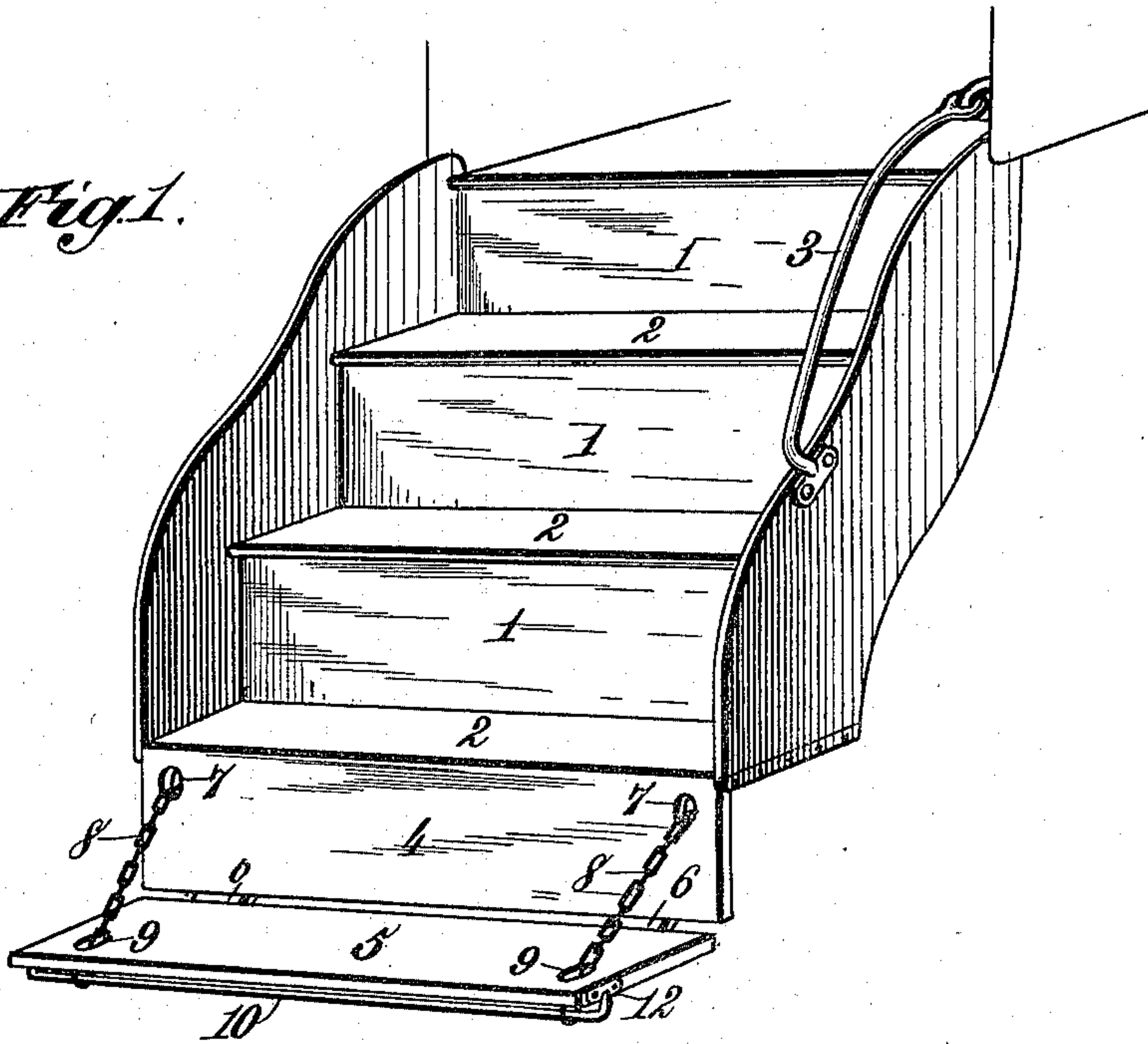
R. P. THOMAS.

DROP STEP ATTACHMENT FOR RAILWAY PASSENGER CARS.

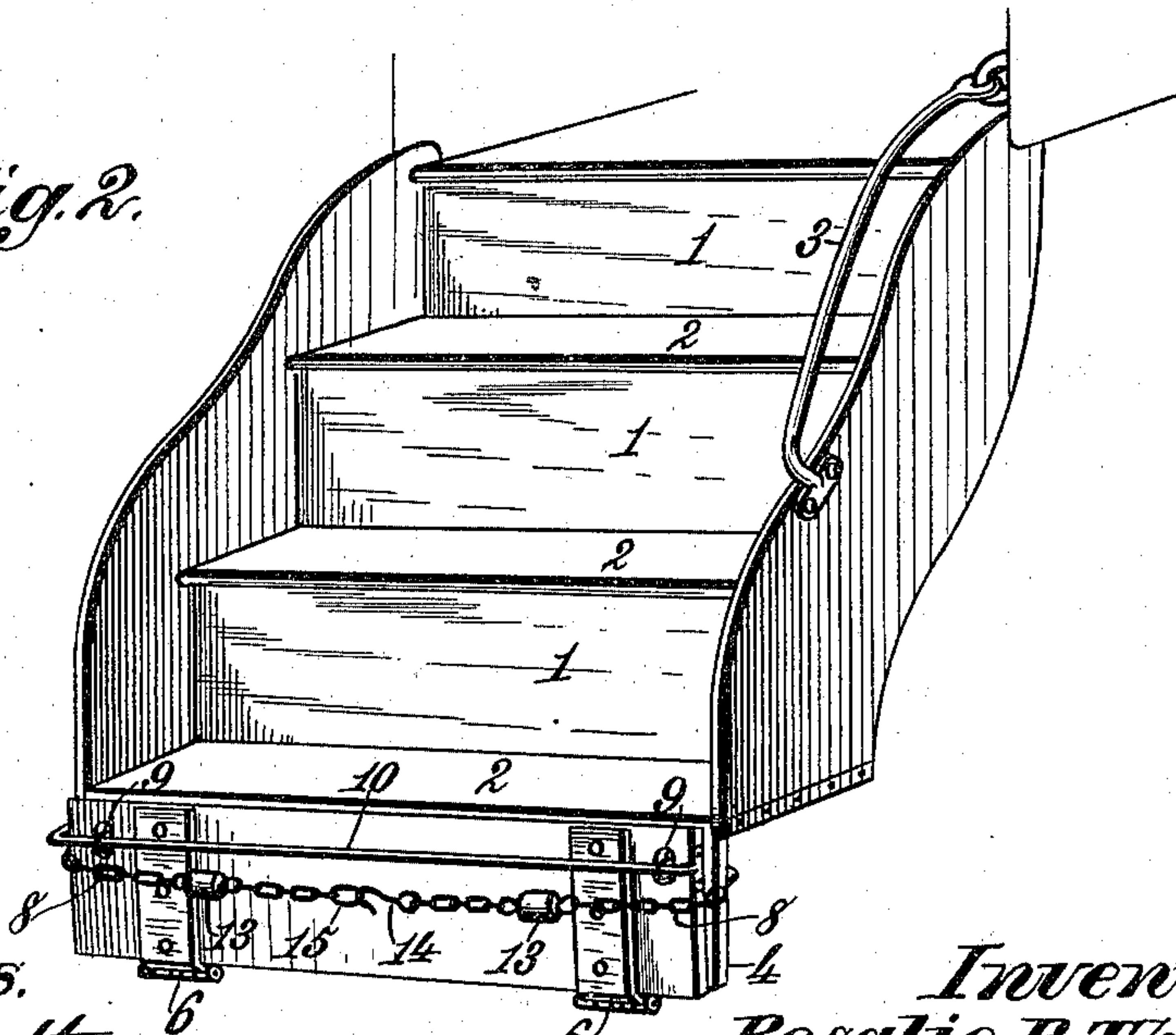
No. 570,350.

Patented Oct. 27, 1896.

*Fig. 1.*



*Fig. 2.*



Witnesses.

*Robert Everett.*

*Thos. A. Green*

Inventor.

*Rosalie P. Thomas.*

By *James L. Norris.*

*Atty.*

(No Model.)

2 Sheets—Sheet 2.

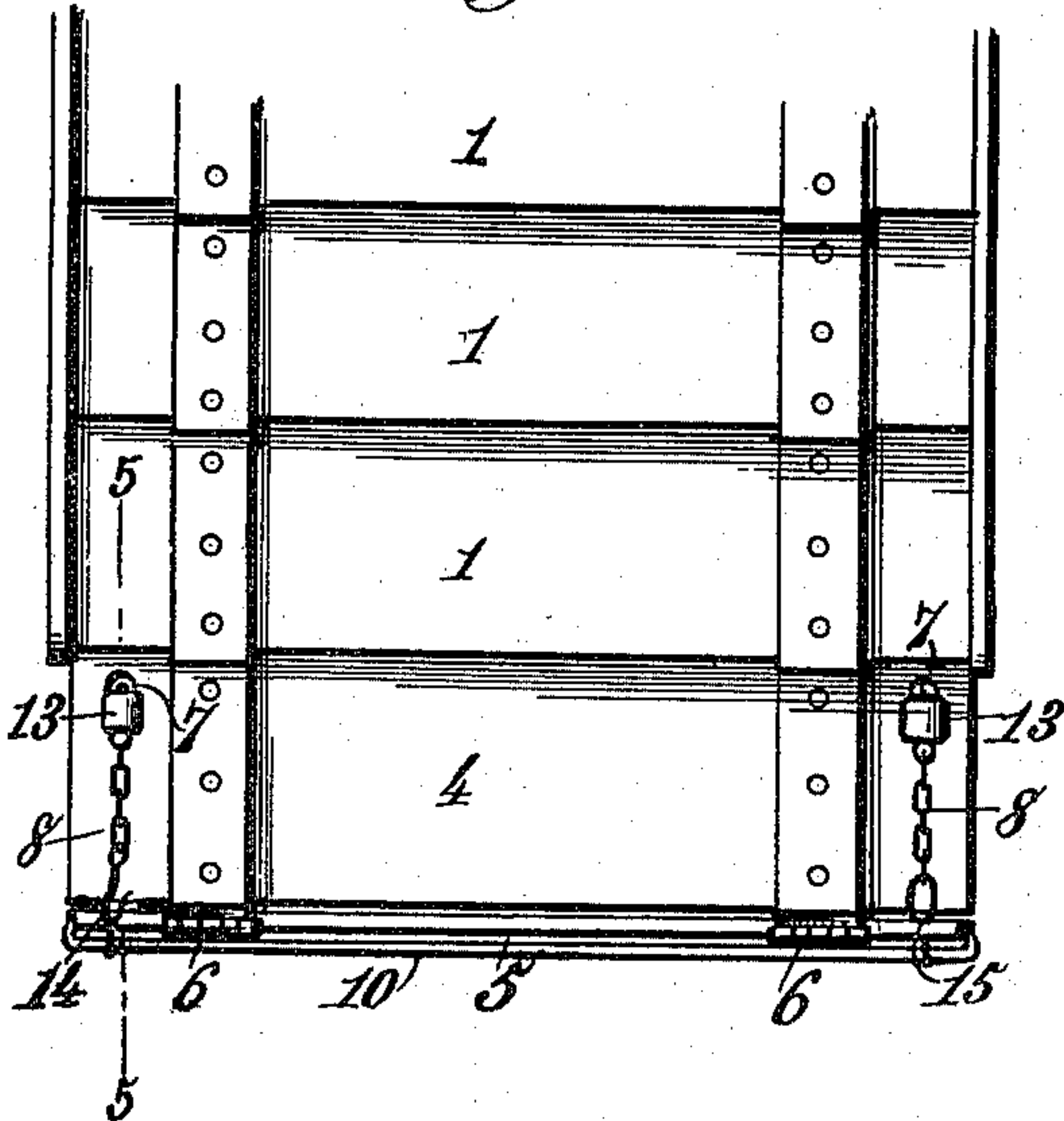
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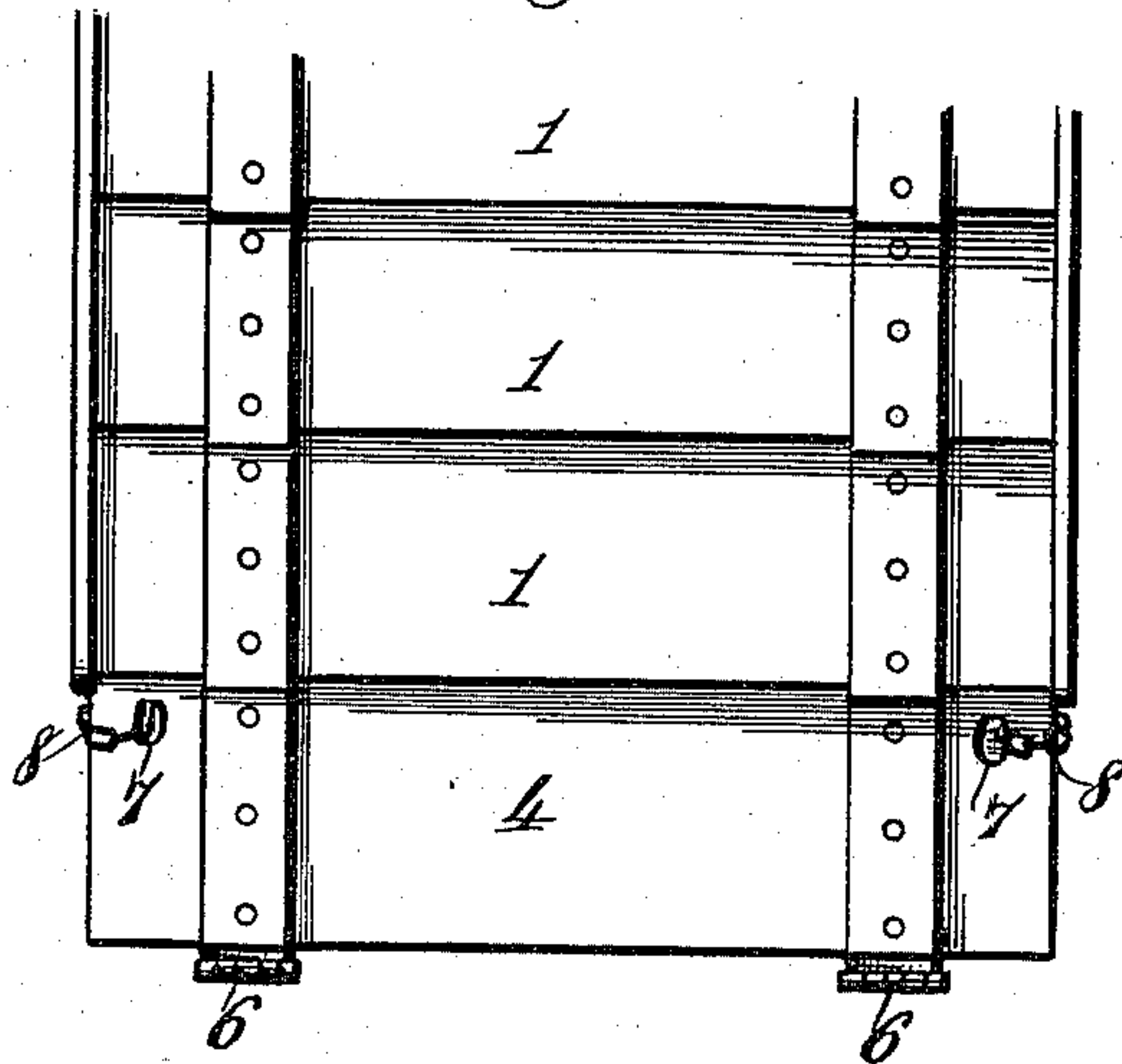
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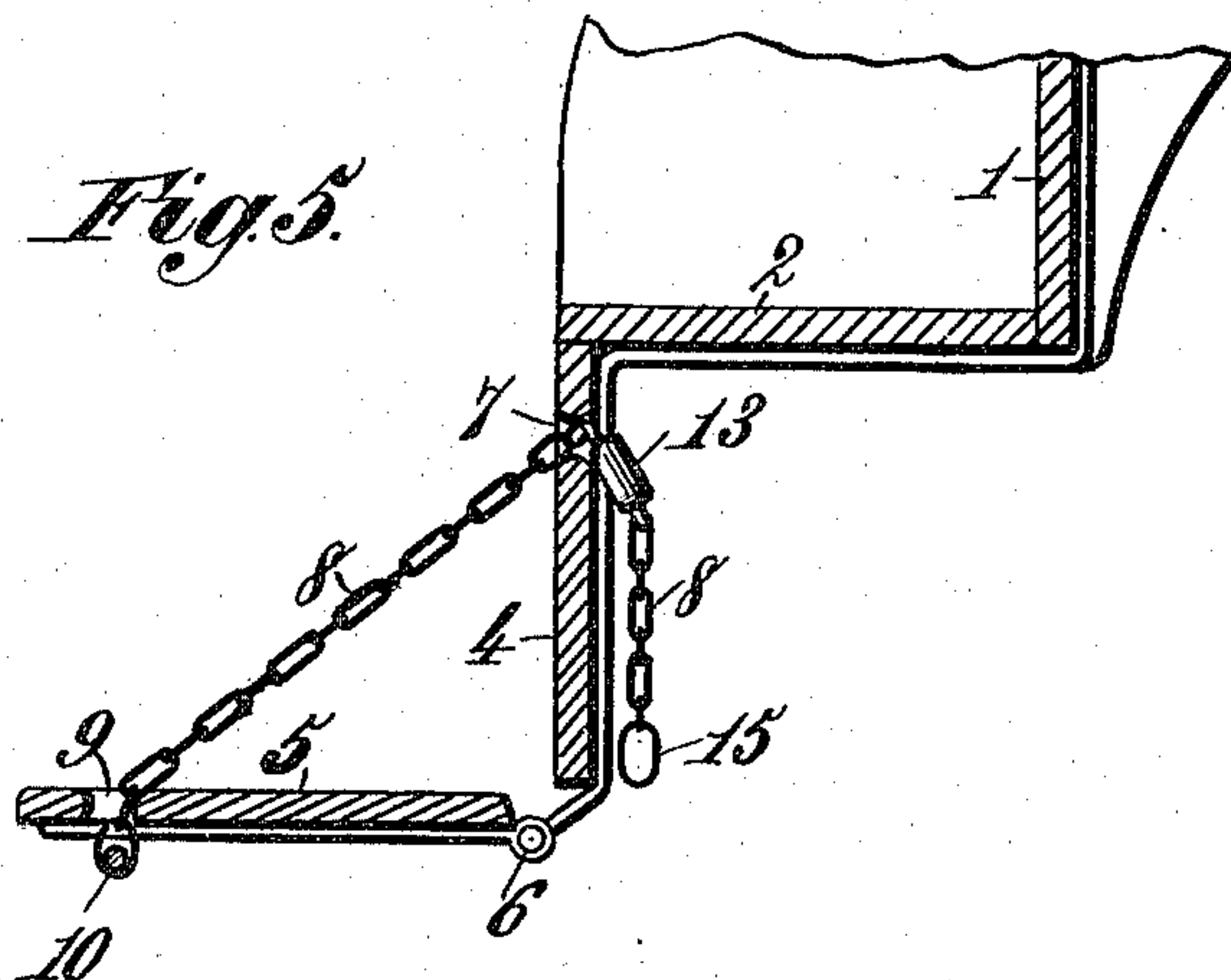
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



Witnesses.

*Robert Garrett.*  
*Thos. A. Burr*

*Inventor.*

*Rosalie P. Thomas.*

*By James L. Norris.*

*Atty.*



# UNITED STATES PATENT OFFICE.

ROSALIE P. THOMAS, OF MARTINSBURG, WEST VIRGINIA.

## DROP-STEP ATTACHMENT FOR RAILWAY PASSENGER-CARS.

SPECIFICATION forming part of Letters Patent No. 570,350, dated October 27, 1896.

Application filed August 3, 1896. Serial No. 601,537. (No model.)

*To all whom it may concern:*

Be it known that I, ROSALIE P. THOMAS, a citizen of the United States, residing at Martinsburg, in the county of Berkeley and State of West Virginia, have invented new and useful Improvements in Drop-Step Attachments for Railway Passenger-Cars, of which the following is a specification.

This invention relates to steps employed at the ends of a railway passenger car or coach, through the medium of which the passengers enter or leave the same.

The chief object of the present invention is to provide a novel, simple, efficient, and economical drop-step attachment designed to be applied to the lower end of the steps of a car or coach and susceptible of dropping down or unfolding for the convenience of passengers in entering or leaving the coach and of folding to an approximately vertical position, so that it will be entirely out of the way to offer no objectionable projection or obstruction when not required for use or when the train is moving.

To accomplish this object, my invention consists in the combination of a riser connected with the lower tread of the car-steps and having guide-openings at or near its ends, a drop-step pivoted to the riser, and chains connected with the drop-step passing through the guide-openings of said riser and provided with stop-blocks and with fastening devices at their extremities, said stop-blocks serving as stops to support the drop-step when unfolded and said fastening devices being adapted to be connected in front of the drop-step when the latter is folded upward, whereby it is held in its folded position, as will more fully hereinafter appear, reference being made to the accompanying drawings, in which—

Figure 1 is a detail perspective view showing my invention applied to the steps at one end of a railway passenger car or coach, the drop-step being unfolded and in position for use by the passengers entering or leaving the car. Fig. 2 is a similar view showing the drop-step folded to a vertical position and secured by the chains which support it when dropped downward or unfolded. Fig. 3 is a detail elevation looking at the rear of the car-steps, with the drop-step in its unfolded position, for the purpose of showing the position of the inner or rear ends of the chains

when the drop-step is in position for use. Fig. 4 is a similar view showing the manner in which the chains pass around to the front of the steps when the drop-step is folded upward to the position shown in Fig. 2; and Fig. 5 is a detail sectional view taken on the line 5 5, Fig. 3.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The numerals 1 and 2 indicate the risers and treads of steps usually employed at the end or ends of a railway passenger car or coach for the convenience of passengers entering or leaving the car. These steps may be of any ordinary construction, and, if desired, they may be provided with a hand-rail, as at 3, which can be grasped by the hand to aid in mounting the steps.

The lower end of the car-steps is provided with a supplemental riser 4, to the lower edge of which the drop-step 5 is hinged or pivoted through the medium of suitable hinges, as at 6. The riser 4 is provided at or near each end with a guide-opening 7, preferably formed by simply boring or otherwise forming circular holes through the riser. These guide-openings may, however, be otherwise constructed and applied to the riser, so that they constitute guides for chains 8, which are connected at one end with the drop-step 5 and are passed through the guide-openings. The chains 8 can be secured to the drop-step in any suitable manner, but I prefer to connect them therewith by passing the chains through holes or orifices 9 and engaging them with a rod 10, having its extremities attached to the ends of the drop-step, as at 12, through the medium of any suitable devices. As herein shown, the rod 10 is arranged parallel with one side of the drop-step and its extremities are bent or turned and secured to the ends of the drop-step by ordinary screws, as will be clearly understood by reference to Fig. 1.

The chains 8 are provided intermediate their ends with stop-blocks 13 of any construction which will prevent them from passing through the guide-openings 7, but which will enable the chains to be slid in one direction through said guide-openings. The stop-blocks may be in the form of any suitable enlargement, or they may be metal blocks rigidly attached to the chains, and they are lo-



cated some distance from the inner or rear extremities of the chains, which extremities are provided respectively with a hook 14 and an eye 15, or equivalent fastening devices, whereby one end of the chain may be detachably engaged with the other end when the drop-step is folded to approximately a perpendicular position, as will more fully hereinafter appear.

10 The hinges 6 are preferably strap-hinges, but they may be hinges of any ordinary or known construction.

The drop-step 5 is susceptible of standing in a vertical position at the outer side of the riser 4, as shown in Fig. 2, or of being dropped or turned down to an approximately horizontal position, as shown in Figs. 1 and 5. When the drop-step is unfolded or turned down to a horizontal position, as in Figs. 1 and 5, the stop-blocks 13 strike the rear side of the riser 4 at points in juxtaposition to the guide-openings 7, and since the stop-blocks cannot pass through these guide-openings they serve as stops and enable the chains to support the drop-step in position for use by passengers entering or leaving the car or coach. After the drop-step has been utilized by the passengers it can be turned or folded to an approximately perpendicular position at the outer side of the riser 4, and in order to secure it in this position the inner or rear ends of the chains are grasped and the chains are drawn lengthwise through the guide-openings 7, so that the inner or rear portions of the chains can be brought around in front of the folded drop-step and connected together at their extremities through the medium of the hook 14 and eye 15 or equivalent fastening devices. The chains thus serve to lock the drop-step in its folded position, so that the step will offer no objectionable projection or obstruction when not required for use, or when the train is moving.

The drop-step can be conveniently and quickly lowered or unfolded whenever it is desired to place it in position for use by simply disconnecting the hook 14 from the eye 15, after which the step can be easily pulled downward until the stop-blocks 13 strike the riser 4, when the upward motion of the step will be arrested and it will be firmly sustained in approximately horizontal position, thereby extending or lowering the car-steps and providing a structure which enables passengers to more conveniently enter or leave the car or coach.

It will be obvious that the car-steps can be employed by passengers to enter or leave the car while the drop-step is in its folded position. This may be desirable under certain circumstances, as, for example, where the car-steps are of sufficient length and do not require to be extended or lowered for the convenience of the passengers entering or leaving the car.

My invention involves a very simplified construction and arrangement of parts and

produces a novel and useful drop-step attachment for car and other steps which can be very economically manufactured, easily attached, and conveniently and quickly folded and unfolded whenever occasion demands. It will be obvious also that with this invention it will be much more convenient for the brakeman or car attendant to unhook and lower the drop-step than to get and place in position a stool, as sometimes employed to assist passengers in alighting from or boarding a car.

Having thus described my invention, what I claim is—

1. The combination with steps, of a riser connected with the lower tread of the steps and having guide-openings at or near its ends, a drop-step hinged or pivoted to the riser, and chains connected with the drop-step, passing through the guide-openings of said riser and provided with stop-blocks and with fastening devices at their extremities, said stop-blocks serving as stops to support the drop-step when unfolded, and said fastening devices being adapted to be connected in front of the drop-step when the latter is folded, substantially as described.

2. The combination with car-steps, of a riser secured to the outer lower end of the steps and provided with guides at or near its ends, a drop-step hinged or pivoted to the lower edge of the riser, and chains connected with the drop-step, passing through the guides of said riser, and provided with stop-blocks and with a hook and an eye at their extremities, said stop-blocks serving as stops to support the drop-step when unfolded, and said hook and eye being adapted to be connected when the drop-step is folded upward, substantially as described.

3. The combination with car-steps, of a riser secured at the lower end of the steps, a drop-step hinged or pivoted to the lower edge of the riser, and chains having stop-blocks and fastening devices at their extremities, said chains serving to support the drop-step when unfolded, and adapted to have their ends connected for the purpose of securing the drop-step in its unfolded position.

4. The combination with car-steps, of a riser secured at the lower end of the steps and having guide-openings at or near its ends, a drop-step pivoted to the riser and provided with an attached rod, and chains connected with the rod of the drop-step, passing through the guide-openings of said riser, and provided with stop-blocks and with fastening devices at their extremities, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ROSALIE P. THOMAS.

Witnesses:

D. S. EICHELBERGER,  
HENRY THOMAS.