

No. 662,006.

Patented Nov. 20, 1900.

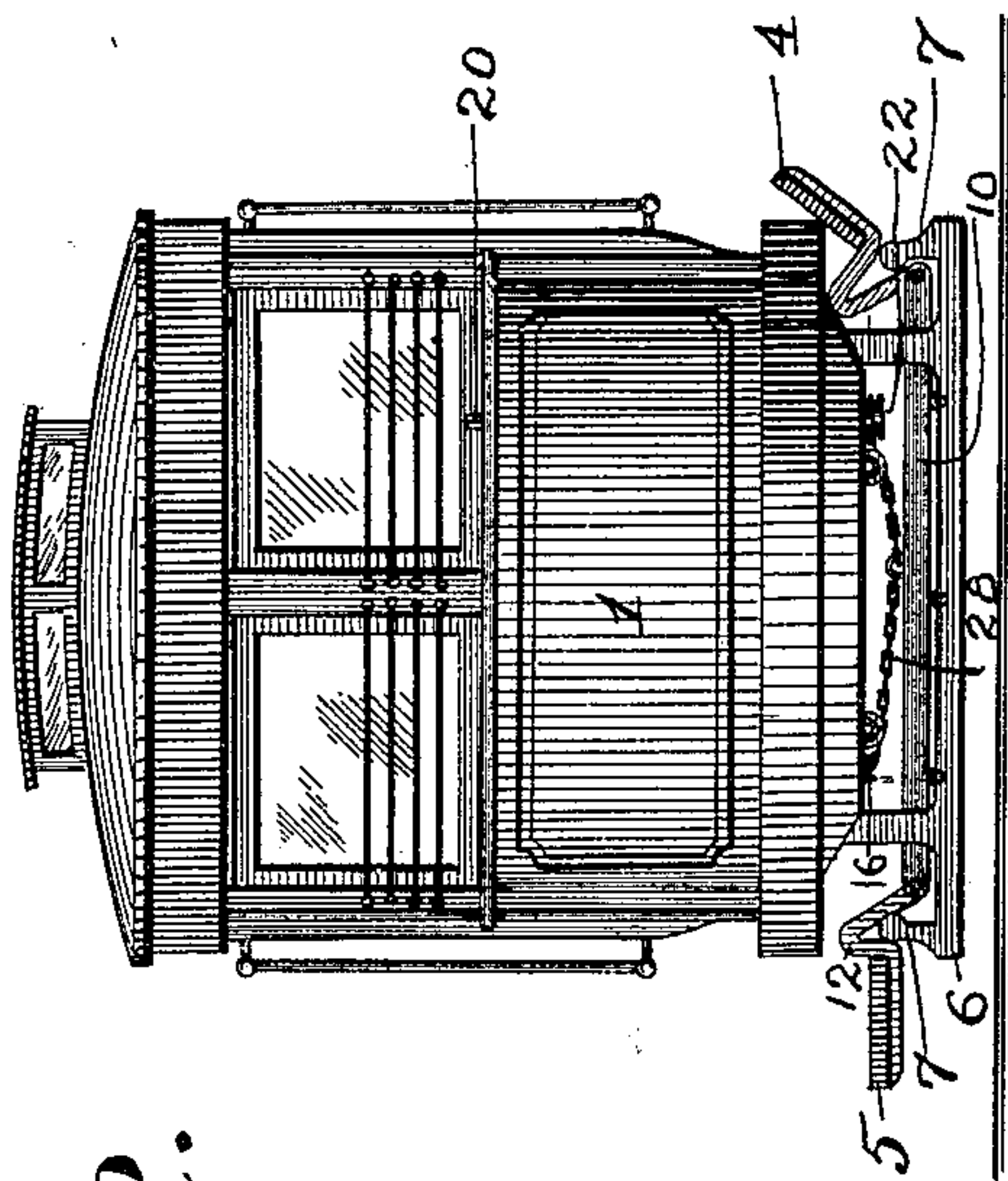
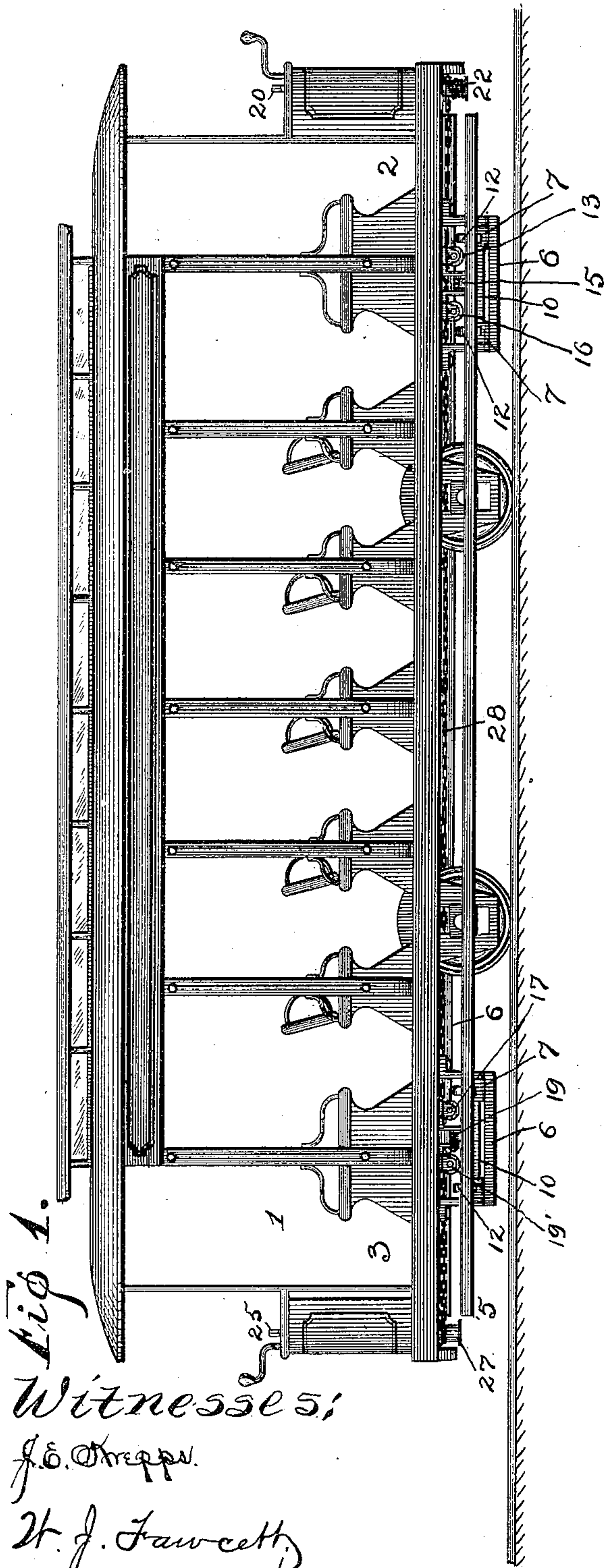
R. E. LINTNER.

MECHANISM FOR RAISING OR LOWERING FOOTBOARDS ON OPEN CARS.

(Application filed Sept. 7, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:  
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Inventor.  
Robert E. Lintner.  
Per Richard S. Harrison,  
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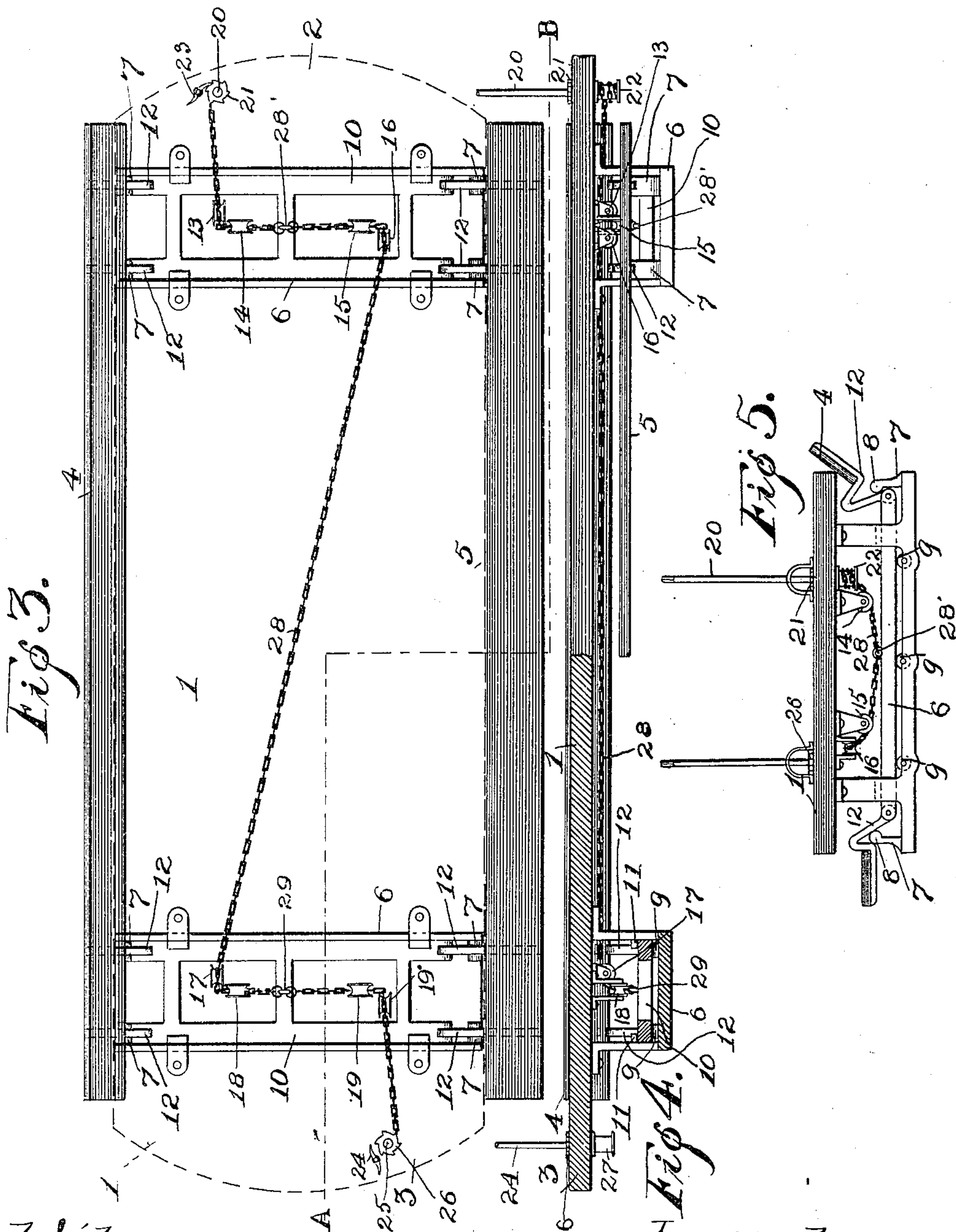
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(Application filed Sept. 7, 1900.)

(No Model.)

2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

ROBERT E. LINTNER, OF EAST PITTSBURG, PENNSYLVANIA.

MECHANISM FOR RAISING OR LOWERING FOOTBOARDS ON OPEN CARS.

SPECIFICATION forming part of Letters Patent No. 662,006, dated November 20, 1900.

Application filed September 7, 1900. Serial No. 29,282. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT E. LINTNER, a citizen of the United States of America, residing at East Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Mechanism for Raising or Lowering Footboards on Open Cars; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in a mechanism for raising and lowering the footboards on open cars.

The invention relates particularly to that class of open or summer cars in which the footboards are each composed of one piece and extend along the sides.

The object of my invention is to provide a simple and positive means of raising or lowering either footboard from the platform at either end of the car. By this means the motorman or conductor will have full control of the footboard without having to leave the car.

With this object in view the invention finally consists in the novel construction, combination, and arrangements of parts, as will be fully described in the accompanying specification.

In describing the invention reference is to be had to the accompanying drawings, wherein like detail parts are designated by numerals of like character in the several views, in which—

Figure 1 is a side elevation of an open summer-car having my improvements attached thereto. Fig. 2 is an end elevation of the same. Fig. 3 is a plan view of the footboards and operating mechanism detached from the car. Fig. 4 is a side elevation of the footboards and mechanism shown partly in section on the line A B of Fig. 3. Fig. 5 is an end elevation of the footboards and mechanism.

Referring to the drawings, the numeral 1 designates an open street-car, 2 and 3 the platforms, and 4 and 5 the footboards thereof. Attached to and extending across the under side of the car-body near the platforms are the frames 6, which form a part of and are intended to confine the mechanism. Each of these frames are provided at its ends with a pair of

upwardly-projecting abutments 7, which terminate in rounded portions 8. These frames are provided near their edges with antifric- 55 tion-rollers 9, and upon these rollers are mounted the frames 10, which are held in contact therewith by means of lugs 11 upon the main frame. Pivotally attached to the ends of each of the frames 10 is a pair of bent levers 12, 60 which are connected at their outer ends to and form supports for the footboards 4 and 5. Above the frame at one end of the car and attached to the body thereof is the small pulleys or sheave-wheels 13, 14, 15, and 16. At 65 the opposite end of the car above the frame is attached a similar set of wheels 17, 18, 19, and 19'. Extending down through the platform 2 is the shaft 20, which is provided with a ratchet-wheel 21, and small drum 22, said 70 ratchet-wheel being adapted to engage with a dog 23, pivotally attached upon the platform. The opposite end of the car or platform is provided with a similar dog 24 and shaft 25', carrying a ratchet-wheel 26 and drum 27. 75

The shaft-drums at each end of the car are connected to one another by a chain 28. This chain passes over the pulley-wheel 13, under the wheel 14, connecting to the frame 10 at 28', thence under the wheel 15, over the wheel 80 16, to the wheel 17, over this wheel and under the wheel 18, connecting to the frame 10 at 29, thence under the wheel 19 and over the wheel 19'.

In the views shown the footboard upon the 85 near or left side of the car is shown down, while the one upon the right side is shown up or in the position it assumes when not in use. Now when it becomes necessary to reverse the boards the dog 23 is released from 90 the ratchet-wheel 21. The operator at the opposite end of the car then applies a crank-handle to the shaft 25 and rotates said shaft to wind the chain upon the drum 27. This movement of the chain causes the frames 10 95 to shift their positions to the left, and in shifting their positions the bent levers 12, which connect the boards with the frames, engage with the rounded ends of the abutments 7, thereby raising the board upon the left and 100 lowering the board upon the right. The dog 24 is then placed into engagement with the ratchet-wheel to lock the boards in position or prevent the chain unwinding from the



drum. It will be seen that by this means the boards may be raised or lowered from either end of the car. The chain may be caused to pass over additional pulley-wheels after it passes from the pulley 16 to the pulley 17, so as to carry it along the side of the car instead of diagonally across, as shown. Other modifications of the detail parts may be made without departing from the principles involved in the invention.

Having thus fully shown and described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a mechanism for raising and lowering the footboards on open street-cars, the combination with the car-body and the footboards, of supports arranged beneath the car-body, laterally-adjustable frames mounted upon said supports, supports extending inwardly from said footboards and pivotally attached to said adjustable frames, fixed abutments engaging said footboard-supports, and a means of adjusting said frames from alternate ends of the car successively to raise one of said boards and lower the other at the same time.

2. In a mechanism for raising and lowering the footboards on open street-cars, the combination with the car-body and the footboards, of supports arranged beneath the car-body, laterally-adjustable frames mounted upon said supports, supports extending inwardly from said footboards and pivotally attached to said adjustable frames, fixed abutments engaging said footboard-supports, and a means of adjusting said frames from alternate ends of the car successively to raise one of said

boards and lower the other and lock the same in position.

3. In a mechanism for raising and lowering the footboards on open street-cars, the combination with the car-body and the footboards, of supports arranged beneath the car-body, laterally-adjustable frames mounted upon rollers on said supports, supports extending inwardly from said footboards and pivotally attached to said adjustable frames, fixed abutments engaging said footboard-supports, and a means of adjusting said frames from alternate ends of the car successively to raise one of said boards and lower the other at the same time and lock the same in position.

4. In a mechanism for raising and lowering the footboards on open street-cars, the combination with the car-body and the footboards, of supports arranged beneath the car-body, laterally-adjustable frames mounted upon rollers on said supports, supports extending inwardly from said footboards and pivotally attached to said adjustable frames, fixed abutments engaging with said footboard-supports, and a means of adjusting said frames to raise one of said boards and lower the other at the same time from alternate ends of the car successively.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

ROBERT E. LINTNER.

Witnesses:

GEORGE WILSON,  
RICHARD S. HARRISON.