

(No Model.)

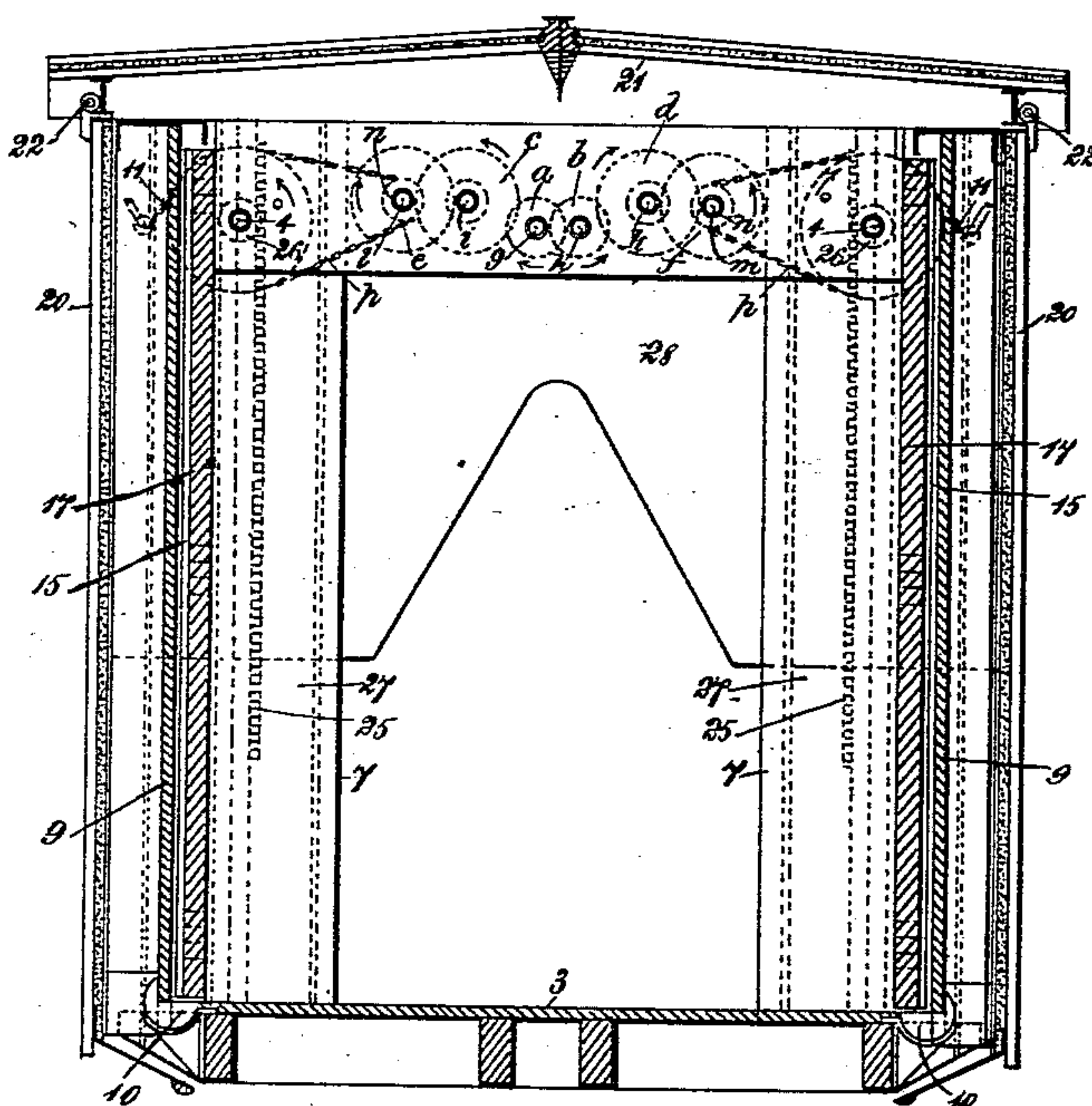
2 Sheets—Sheet 1

A. BIERSTADT.  
RAILWAY CAR.

No. 559,962.

Patented May 12, 1896.

FIG. 1.



Witnesses:  
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Charles H. Patterson.

Inventor:  
Albert Bierstadt

By Simonds, Burdett & Frothingham  
his Attorneys.

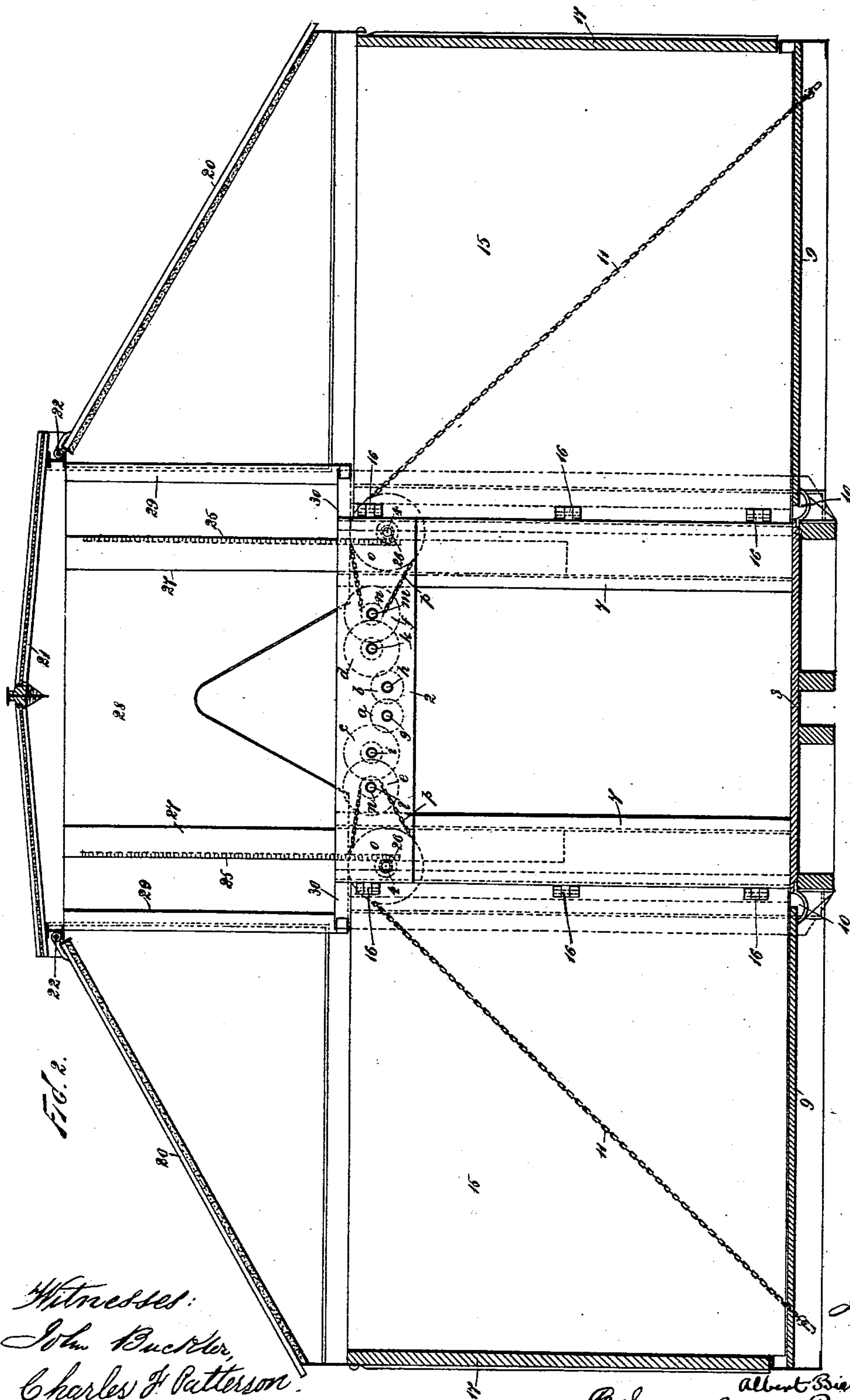
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his Attorneys.



# UNITED STATES PATENT OFFICE.

ALBERT BIERSTADT, OF NEW YORK, N. Y.

## RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 559,962, dated May 12, 1896.

Application filed May 12, 1894. Serial No. 510,961. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT BIERSTADT, a citizen of the United States, residing at New York, in the county and State of New York, have invented a new and useful Improvement in Railway-Cars or other Like Vehicles, the same comprising improvements upon the apparatus shown and described in my application filed June 2, 1893, Serial No. 476,343, and in my application filed June 12, 1893, Serial No. 477,370.

The following is a specification of my present invention, the object of which is to provide a railway-car or other like vehicle having a side wall or walls which are movable and extensible and thereby capable of forming wings or enlargements to the car, with an extensible roof, which is capable of being raised simultaneously with the lowering of that part of the side wall of the car which forms the wing floor, and which is also capable of being lowered simultaneously with the raising of the side wall last above mentioned, and to further provide said car with means for carrying out the result above referred to. Such a car is suitable for the purposes of lecturing, exhibiting pictures, camping out, &c., and may also be used as a chapel, church, and also as a theater.

I attain the object desired by means of the mechanism illustrated and described in the accompanying drawings.

The invention is shown and described as applied to a railway-car.

Referring to the drawings, Figure 1 is a view of a cross-section of my improved car with the side walls closed and the extensible roof lowered. Fig. 2 is a view of a cross-section of my improved car with the side walls unfolded and the extensible roof raised.

In the accompanying drawings, the numeral 3 denotes the floor of the car.

7 denotes upright posts attached rigidly to the floor, extending upward and forming supports for an extensible roof when said roof is not raised. These posts are hollow and thereby permit the racks, as hereinafter mentioned, to move up and down. Secured to these posts is a beam 2, on which are fastened the shafts and pulleys by means of which the extensible

roof is raised and lowered and by means of which the part 9 is lowered and raised, as hereinafter stated.

9 denotes a portion of the side wall hinged to the floor, which portion, when opened and moved outwardly on its hinges, forms a wing floor.

10 denotes the hinges last above referred to.

11 denotes chains attached to the portion 9 near its outer end and passing around a drum securely attached to the shaft 4.

15 denotes a portion of the side wall hinged to the upright posts 7 and which, when extended outwardly on its hinges, forms the end wall of the wing.

16 denotes the hinges last above referred to.

17 is a portion of the side wall hinged to the portion 15 and which, when turned outwardly on its hinges, forms a part of the side wall of the wing.

20 denotes a portion of the side walls hinged to the extensible roof 21, which portion, when raised, forms the wing roof.

22 denotes the hinges last above referred to.

The part 20 when closed forms the outside portion of the side walls of the car, and when thus closed may be held in place by any suitable device. The extensible roof 21 is raised by means of the rack-and-pinion device 25 and 26, the latter being attached rigidly to the shaft 4.

27 denotes posts to which the racks are attached and which slide in the hollow of the upright posts 7.

28 is the end wall of the extensible roof, and when said roof is not raised takes the position shown in Fig. 1.

29 are supports for the top of the extension-roof attached to the beam 30, which is also a part of the extensible roof.

*a b c d e f* are intermeshing pulleys, rigidly attached to the shafts *g, h, i, k, l*, and *m* on the beam 2. The shafts *l* and *m* have also rigidly attached to them a sprocket-wheel *n*, over which and over the sprocket-wheel *o*, which is rigidly attached to the shaft 4, an endless chain *p* passes.

The operation of the device is as follows: When power is applied to the shafts *a* and *b* either separately or together in the direction



indicated by the arrows, Fig. 1, the shafts 4 are, through the intermeshing pulleys above referred to and connections, rotated outwardly, thereby causing the rack-and-pinion device to operate in such a manner as to raise the extensible roof and also thereby causing the chains 11 to unwind from the drum, which is securely attached to the shaft 4. This permits the portions 9 9 to swing outward on their hinges simultaneously with the raising of the extensible roof, so as to finally assume the horizontal position shown in Fig. 2, the overlapping parts 20 (shown hinged at the top to the part 21) yielding sufficiently to allow of this movement. When the extensible roof portion and the said wing floor portions are in final position, the portion 20 is then raised sufficiently to permit of the outward movement of the parts 15 and 17. The part 15 is then moved outwardly on its hinges until it is at right angles to the posts 7. The part 17 is moved outwardly on its hinges until it is at right angles to the portion 15. The part 20 is then lowered until it rests at its outer edge upon the portion 17.

The operation in closing the car is merely the reverse of that in enlarging it.

It is obvious that the car may be of any suitable size and may be made of the material ordinarily used in the construction of Pullman cars. The car when closed will be preferably of the size of ordinary Pullman cars and as are generally arranged to be attached with passenger-trains.

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

1. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly and downwardly swinging portion to form a wing floor and adapted to be moved simultaneously with the raising or lowering of the extensible roof, substantially as described.

2. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly and downwardly swinging portion to form a wing floor adapted to be moved simultaneously with the raising or lowering of the extensible roof and an upwardly-swinging portion, substantially as described.

3. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of a moving portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, and a portion adapted to swing outwardly and at right angles to the floor of the car, substantially as described.

4. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of a swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, and a portion adapted to swing outwardly and

at right angles to the floor of the car, substantially as described.

5. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly-swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof and a portion adapted to swing outwardly and at right angles to the floor of the car, substantially as described.

6. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly and downwardly swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, and a portion adapted to swing outwardly and at right angles to the floor of the car, substantially as described.

7. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of a moving portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, a portion adapted to swing outwardly and at right angles to the floor of the car and a portion adapted to swing outwardly from said last-mentioned swinging portion, substantially as described.

8. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of a swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, a portion adapted to swing outwardly and at right angles to the floor of the car and a portion adapted to swing outwardly from said last-mentioned swinging portion, substantially as described.

9. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly-swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof and a portion adapted to swing outwardly and at right angles to the floor of the car and a portion adapted to swing outwardly from said last-mentioned swinging portion, substantially as described.

10. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly and downwardly swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, a portion adapted to swing outwardly and at right angles to the floor of the car, and a portion adapted to swing outwardly from said last-mentioned swinging portion, substantially as described.

11. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of a portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, an upwardly-swinging portion and a portion adapted to swing outwardly and at right angles to the floor of the car, substantially as described.



12. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of a swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, and an upwardly-swinging portion and a portion adapted to swing outwardly and at right angles to the floor of the car, substantially as described.

10 13. A railway-car or other like vehicle pro-  
vided with an extensible roof and a side wall  
or walls composed in part of an outwardly-  
swinging portion adapted to be moved simul-  
taneously with the raising or lowering of the  
15 extensible roof, an upwardly-swinging por-  
tion and a portion adapted to swing outwardly  
and at right angles to the floor of the car, sub-  
stantially as described.

14. A railway-car or other like vehicle pro-  
20 vided with an extensible roof and a side wall  
or walls composed in part of an outwardly and  
downwardly swinging portion to form a wing  
floor adapted to be moved simultaneously with  
the raising or lowering of the extensible roof,  
25 an upwardly-swinging portion and a portion  
adapted to swing outwardly and at right  
angles to the floor of the car, substantially as  
described.

15. A railway-car or other like vehicle pro-  
 30 vided with an extensible roof and a side wall  
 or walls composed in part of a portion adapted  
 to be moved simultaneously with the raising  
 or lowering of the extensible roof, an up-  
 wardly-swinging portion, a portion adapted  
 35 to swing outwardly and at right angles to the  
 floor of the car and a portion adapted to swing  
 outwardly from said last-mentioned swinging  
 portion, substantially as described.

16. A railway-car or other like vehicle pro-  
40 vided with an extensible roof and a side wall  
or walls composed in part of a swinging por-  
tion adapted to be moved simultaneously with  
the raising or lowering of the extensible  
roof, an upwardly-swinging portion, a portion  
45 adapted to swing outwardly and at right  
angles to the floor of the car and a portion  
adapted to swing outwardly from said last-  
mentioned swinging portion, substantially as  
described.

17. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly-swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, an upwardly-swinging portion and a portion adapted to swing outwardly and at right angles to the floor of the car and a portion adapted to swing outwardly from said last-mentioned swinging portion, substantially as described.

18. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly and downwardly swinging portion to form a wing floor adapted to be moved simultaneously with the raising or lowering of the ex-

tensible roof, an upwardly-swinging portion, a portion adapted to swing outwardly and at right angles to the floor of the car and a portion adapted to swing outwardly from said last-mentioned swinging portion, substantially as described.

19. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly and downwardly swinging portion to form a wing floor and adapted to be moved simultaneously with the raising or lowering of the extensible roof and means for producing such simultaneous result, substantially as described.

20. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly and downwardly swinging portion to form a wing-floor adapted to be moved simultaneously with the raising and lowering of the extensible roof, means for producing such simultaneous action and an upwardly-swinging portion, substantially as described.

21. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of a moving portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, means for producing such simultaneous action, and a portion adapted to swing outwardly and in a direction at right angles to the floor of the car, substantially as described.

22. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of a swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, means for producing such simultaneous action, and a portion adapted to swing outwardly and at right angles to the floor of the car, substantially as described.

23. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly-swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof means for producing such simultaneous result and a portion adapted to swing outwardly and at right angles to the floor of the car, substantially as described.

24. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly and downwardly swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, means for producing such simultaneous action, and a portion adapted to swing outwardly and at right angles to the floor of the car, substantially as described.



tion, a portion adapted to swing outwardly and at right angles to the floor of the car and a portion adapted to swing outwardly from said last-mentioned swinging portion, substantially as described.

26. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of a swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, means for producing such simultaneous result, a portion adapted to swing outwardly and at right angles to the floor of the car and a portion adapted to swing outwardly from said last-mentioned swinging portion, substantially as described.

27. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly-swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, means for producing such simultaneous action, a portion adapted to swing outwardly and at right angles to the floor of the car and a portion adapted to swing outwardly from said last-mentioned swinging portion, substantially as described.

28. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly and downwardly swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, means for producing such simultaneous action, a portion adapted to swing outwardly and at right angles to the floor of the car and a portion adapted to swing outwardly from said last-mentioned swinging portion, substantially as described.

29. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of a portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, means for producing such simultaneous action, an upwardly-swinging portion and a portion adapted to swing outwardly and at right angles to the floor of the car, substantially as described.

30. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of a swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, means for producing such simultaneous action, an upwardly-swinging portion and a portion adapted to swing outwardly and at right angles to the floor of the car, substantially as described.

31. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly-swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, means for producing such simultaneous action, an upwardly-swinging portion and a portion adapted to swing out-

wardly and at right angles to the floor of the car, substantially as described.

32. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly and downwardly swinging portion to form a wing floor adapted to be moved simultaneously with the raising or lowering of the extensible roof, means for producing such simultaneous action, an upwardly-swinging portion and a portion adapted to swing outwardly and at right angles to the floor of the car, substantially as described.

33. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of a portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, means for producing such simultaneous action, an upwardly-swinging portion, a portion adapted to swing outwardly and at right angles to the floor of the car and a portion adapted to swing outwardly from said last-mentioned swinging portion, substantially as described.

34. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of a swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, means for producing such simultaneous action, an upwardly-swinging portion, a portion adapted to swing outwardly and at right angles to the floor of the car and a portion adapted to swing outwardly from said last-mentioned swinging portion, substantially as described.

35. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly-swinging portion adapted to be moved simultaneously with the raising or lowering of the extensible roof, means for producing such simultaneous action, an upwardly-swinging portion, a portion adapted to swing outwardly and at right angles to the floor of the car and a portion adapted to swing outwardly from said last-mentioned swinging portion, substantially as described.

36. A railway-car or other like vehicle provided with an extensible roof and a side wall or walls composed in part of an outwardly and downwardly swinging portion to form a wing floor adapted to be moved simultaneously with the raising or lowering of the extensible roof, means for producing such simultaneous action, an upwardly-swinging portion, a portion adapted to swing outwardly and at right angles to the floor of the car and a portion adapted to swing outwardly from said last-mentioned swinging portion, substantially as described.

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