2 Sheets—Sheet 1.

J. T. & D. R. LEIGHTON.

Railway-Car.

No. 206,253. Patented July 23, 1878.

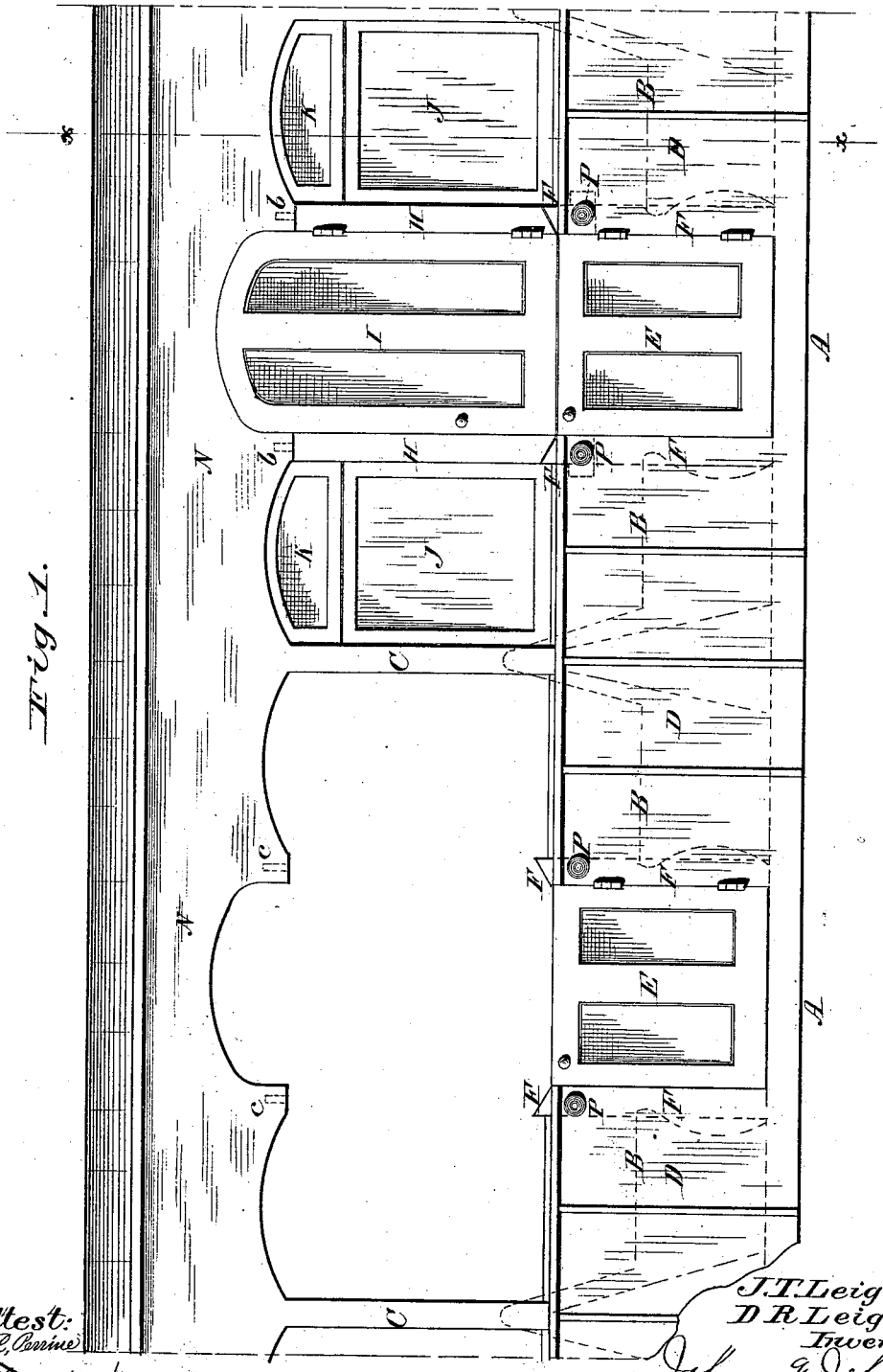

Fig. 1.

Attest:
H. L. Perrine
Floyd Norris

J. T. Leighton.
D. R. Leighton.
Inventors.
By. Johnson & Johnson
Atty's

2 Sheets—Sheet 2.

J. T. & D. R. LEIGHTON.

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Fig. 1.

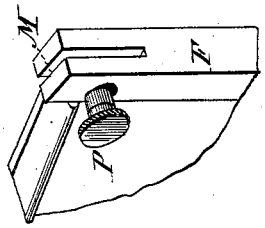


Fig. 4.

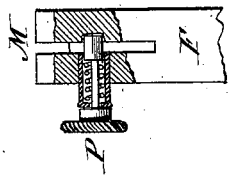


Fig. 2.

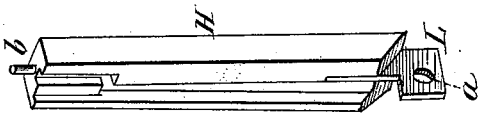
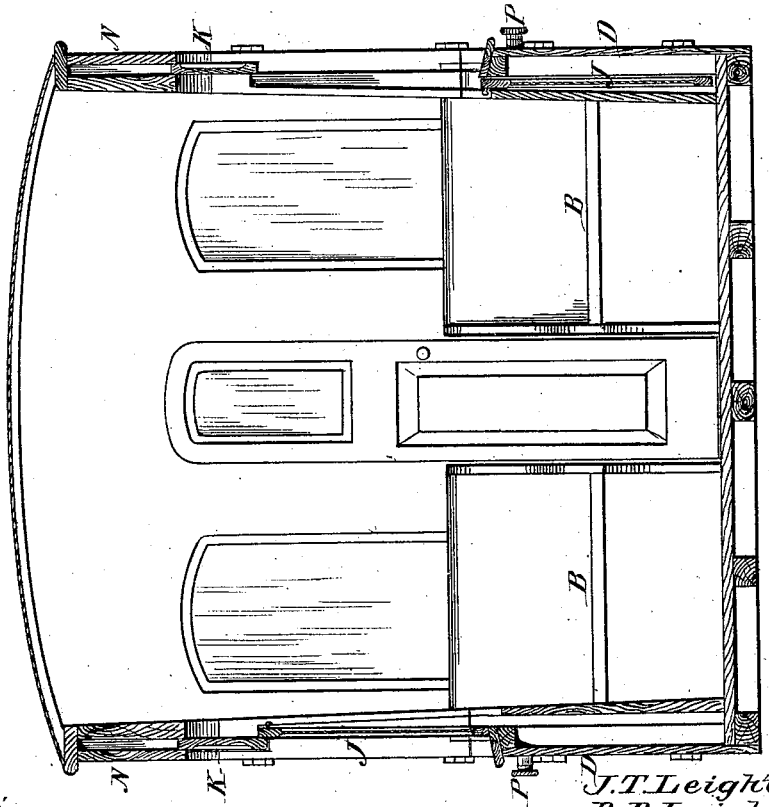


Fig. 3.



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UNITED STATES PATENT OFFICE.

JAMES T. LEIGHTON AND DOMINICUS R. LEIGHTON, OF NEW HAVEN, CONN.

IMPROVEMENT IN RAILWAY-CARS.

Specification forming part of Letters Patent No. **206,253**, dated July 23, 1878; application filed December 14, 1877.

To all whom it may concern:

Be it known that we, JAMES T. LEIGHTON and DOMINICUS R. LEIGHTON, of New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Railway-Cars; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

We construct an open railway-car for summer travel, and, by means of removable single posts or door and sash supports, we convert and adapt the car as a closed or winter car, having doors and sliding sash.

For excursions, picnics, &c., open cars are very desirable to afford abundant air and sunshine for the crowds, and to be easy of ingress and egress, and yet having means and appliances for closing them up by doors and sash in the sides, in case of storms or showers, and for winter weather. For street-railways this is important, in avoiding the expense of having two sets of cars, one for winter and one for summer. The seats extend across the car, and the doors and sash appliances are adapted for use at the sides of the car and between each pair of seats. The body of the car has side paneling corresponding with the ends of the seats, and fixed posts rising to the sills of the windows from the entrances between them on each side of the car, and which entrances are closed by doors, always in use, to protect the passengers from falling out when the cars are in motion. To these fixed doorway-posts, and to the top of the car, removable single posts can be applied in a manner to make a firm support for upper doors and sash at each side of the car when wanted to close the car.

The device for affixing the removable single posts in positions is such as to make the attachment quickly and safely, and with the requisite strength for the parts, which are necessarily small to give the required neat appearance.

For the purpose of giving the full extent of open sides without interference from the glazing, we use meeting sash, the lower section of which slides even with the sill, while the upper section is boxed in the top casing.

Referring to the drawings, Figure 1 represents an elevation of a portion of a car embracing our invention, one section being shown as an open car, and the other section as a closed car; Fig. 2, one of the removable posts; Fig. 3, a cross-section of a car, showing the arrangement of the sliding meeting sash; and Fig. 4, a detail of the fixed-post locking-tenon device.

We construct the car in sections A A, as regards the seats B, which run across the car from side to side, and with fixed posts C C at the ends of each section to support the top. The body of the car has side paneling D, which extends to the sills of the windows, and doors E close the entrances between the seats on each side, and protect the passengers while the cars are running. Short posts F form these doorways, and rise only a little above the side panels and the sills, and the doors E are hinged to one of said posts. The sides of the car, between the top-supporting posts C, are open above the body-panels, thereby forming a summer-car, with short side doors between the seats. A car forty-five feet long would be divided into nine sections, each having opposite side doors E, with short fixed entrance-posts F F and top-supporting posts C which are in line with the seat-backs, which join each other in the several sections.

To convert the car into a closed or winter car, we use attachable single posts H, adapted for attachment to and support upon the short doorway-posts F and with the top of the car. These separate and single posts H, when so arranged, form the doorways for upper doors I, in line with the lower doors, E, and which close the spaces between the posts on each side of the car, while vertically-sliding meeting sash J K are arranged to close the spaces between the single attachable and the fixed top-supporting posts, and thus form a closed or winter car. These attachable separate and single posts H are provided with metal tenons or tongues L, adapted to fit into corresponding grooves M in the tops of the short or lower doorway-posts, F, and secured by spring knob-

catches P, fastened in the side panels, so as to enter and lock with an opening, *a*, or recess in the metal tenon.

The joining ends of the posts F H are made oblique, to bring them in line in making the coupling. The upper ends of the removable posts H are provided with pins *b*, to enter holes *c* in the sides N, which extend a short distance from the top of the car, and form the top of the doorway and of the sash-openings.

The upper door, I, is hinged to one of the attachable single posts H, so as to be removed with the post; or it may be attached by hinges that will admit of its attachment to and removal from the post in changing the car, as described.

When the attachable single posts are in place and locked, they give a safe and firm support for the upper door, and constitute one side of the frame and guide for the sliding sash.

In order to get all the open space possible, we shall construct the side posts and window-sill so that the lower part, J, of the sash will slide down to a level with the sill, and inside of the paneling or outside casing.

The upper part, K, of the sash is adapted to slide up in the top side casing, N, and be there held until required for use.

By thus having the sash in sections, one portion can be slid down, and the other part slid up out of the way, and inclosed in the casing.

The doors are provided with suitable means for fastening them when closed.

The doors can be kept closed and the sash may be opened, if desired.

The removable separate and single posts and the upper doors may be stowed under the seats, or in any other suitable place, when not needed for use; but when adjusted in place in the manner stated they give the car the usual closed appearance.

We do not confine ourselves to any particular construction of or manner of securing the removable posts in place, as it is obvious these details may be varied without departing from the principle of our invention, which embraces, broadly, removable side separate and single posts, for the purpose stated.

The car is built in sections of transverse seats, having fixed corner-posts and side doors, and when the car is converted into a closed winter-car the attachable posts are secured as before described, and when so secured form carriers for the upper section of the door and slideways for the meeting sash of the windows, and thus, in connection with such sash, complete the closed side of the car.

The passengers enter and leave the car by the side doors, which open outward.

The car has the ordinary end platforms for the brakemen, who can pass along the side of the car from end to end by side platforms.

End doors and central passage are provided, wide enough for the conductor to pass through the car in collecting the fares or tickets in winter or bad weather.

A street-car constructed with removable panels, so as to be converted from an open into a closed car, and vice versa, is not new, and our invention is for a different and new construction.

An open-body barouche, convertible into a close or standing-top coach, has also been devised, in which the ends, sides, and top are constructed and adapted for removal; and to convert the open body into a barouche a calash-top is made attachable by screws to the back part of the body and over a portion of the sides, and when so used the body has neither top, sides, nor ends; and when used as a closed coach the calash is removed, and the end pieces, the top, and the side panels are all fitted and secured to each other upon the body, and upper and lower doors are employed in this construction; but our invention leaves the structure of the car intact, and, besides, is a very different construction from the landau.

We claim—

1. For the purpose of converting an open-sided car into a closed-sided car, separate and single posts H H, adapted to be attached to the upper and lower fixed portions D N of the sides of the car, one of which separate and single posts carries the upper door, I, and said attachable posts form window-jamb ways for separate and independent sliding sash, substantially as herein set forth.

2. In a convertible car, the combination, with fixed lower posts, F, extending above the window-sills, one of which carries a section, E, of the entrance-door, of separate and single posts H, and the fixed top and lower side casing, one of which separate and single posts carrying a coincident section, I, of said entrance-door, and both of said single attachable posts forming window-jamb ways for separate sliding sash, substantially as herein set forth.

3. A car constructed in sections of transverse seats, said sections having fixed corner-posts C, lower side paneling, D, top side casing, N, side doors, E I, and separate single attachable door and window posts H, whereby said car may be converted from an open summer-car to a closed winter-car.

4. The attachable single posts provided with the metal tenon or tongue at its lower end and a dowel-pin at its upper end, in combination with the lower fixed post provided with the top slot, whereby the two posts are united together and to the top of the car.

5. The joining ends of the fixed and single attachable posts, made oblique, in combination with the fastening metal tenons, as described.

6. The combination, with the fixed doorway-posts provided with top slots, and the attachable single posts provided with metal tenons,

of the locking knobs or catches, for securing the attachable posts when adjusted in place.

7. The combination, in a convertible car, of the single attachable door and window posts with meeting sash, for the purpose stated.

8. A convertible car having lower side paneling and top side casing, forming sash-boxes to receive the upper and lower sections of meeting sash, when the car is adapted for use as an open-sided car.

9. The combination, in a convertible car, of the separate and single attachable door and window posts H, the side casing, N D, and the fixed corner-posts C, substantially as described.

In testimony that we claim the foregoing we have affixed our signatures in the presence of two witnesses.

JAMES T. LEIGHTON.
DOMINICUS R. LEIGHTON.

Witnesses:
WM. K. TOWNSEND,
M. L. TOWNSEND.