No. 654,926. Patented July 31, 1900.

# T. L. STATE.

## RAILWAY CAR.

(Application filed Apr. 21, 1899.)

(No Model.) 4 Sheets—Sheet 1.

Fig. 1.

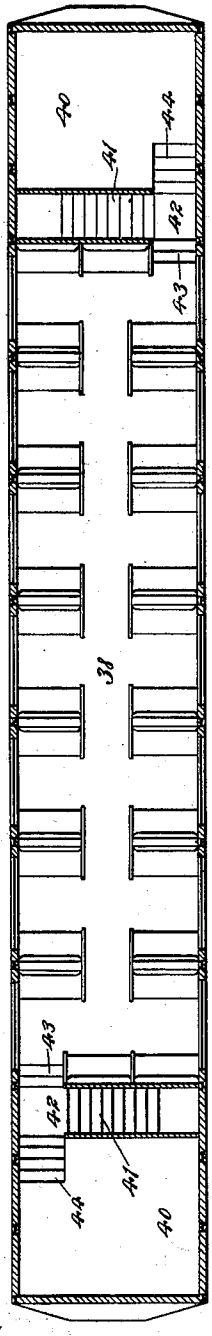
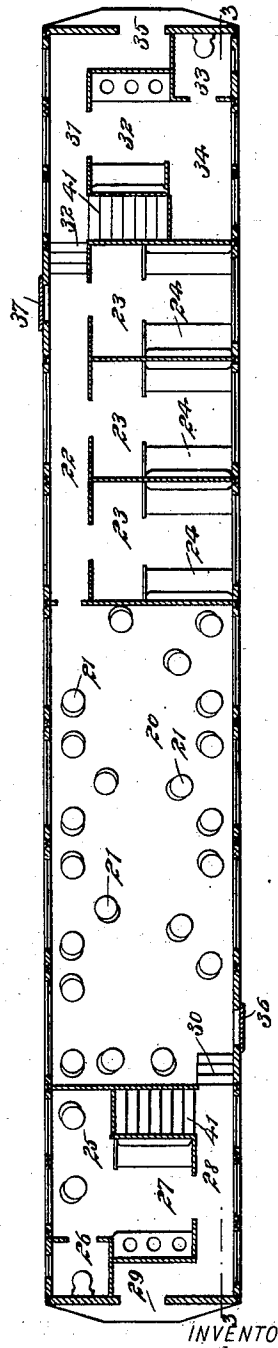



Fig. 2.




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## RAILWAY CAR.

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Fig. 3.

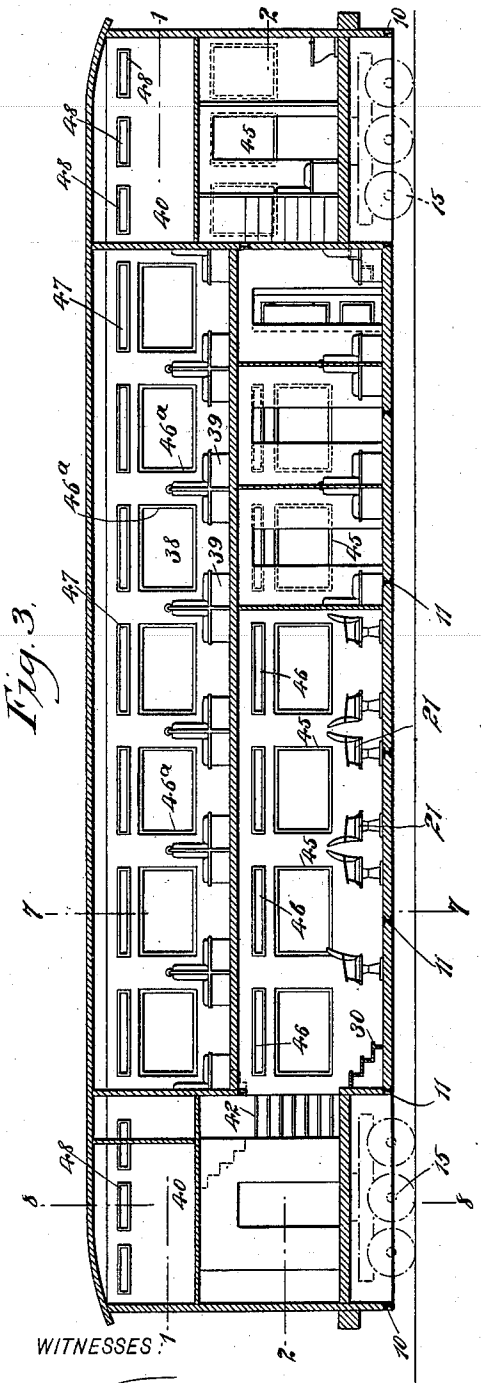
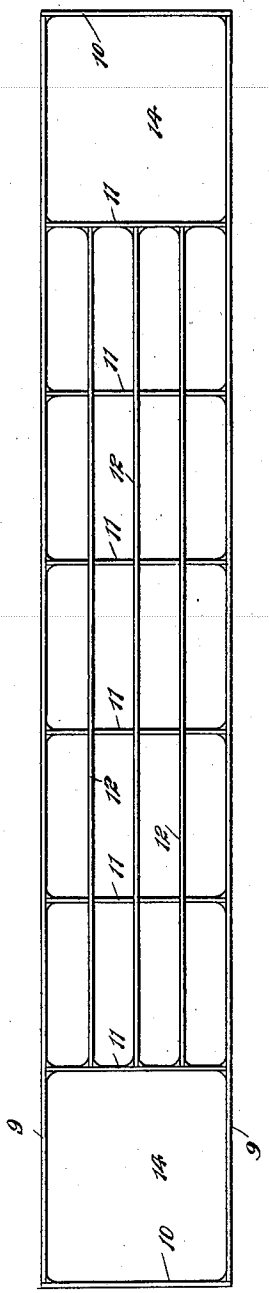



Fig. 4.




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## RAILWAY CAR.

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(No Model.) 4 Sheets—Sheet 3.

Fig. 5.

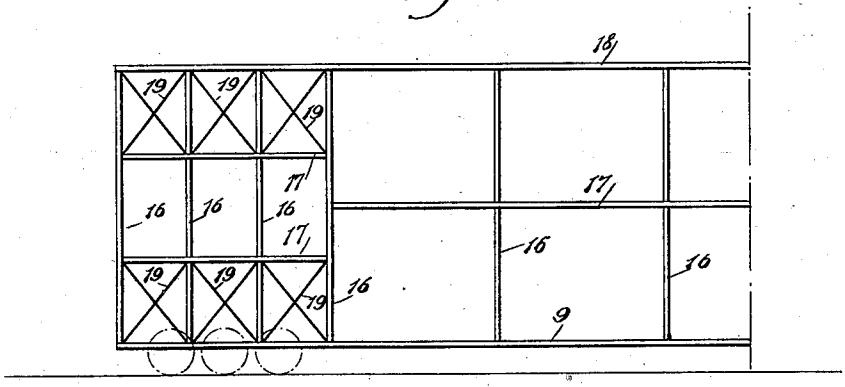
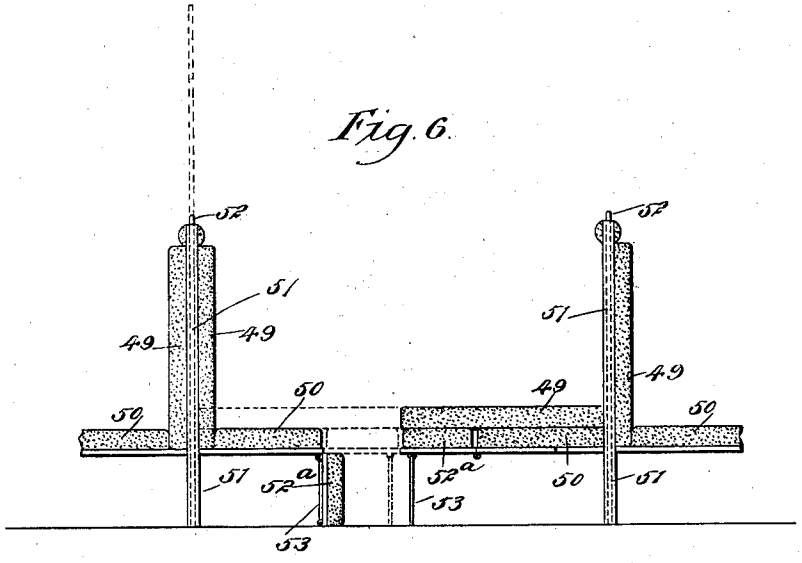



Fig. 6.




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RAILWAY CAR.

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(No Model.) 4 Sheets—Sheet 4.

Fig. 7.

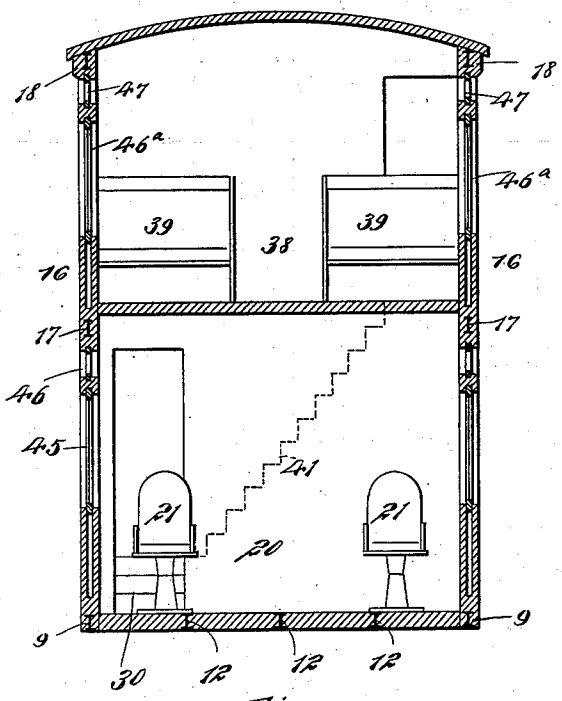
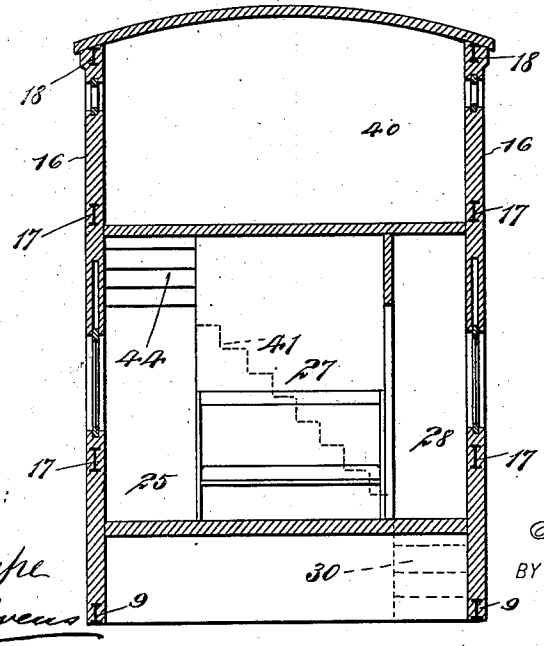



Fig. 8.




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# UNITED STATES PATENT OFFICE.

THOMAS L. STATE, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF TO JOHN F. PRENTIS, OF SAME PLACE.

## RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 654,926, dated July 31, 1900.

Application filed April 21, 1899. Serial No. 713,915. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS L. STATE, of Detroit, in the county of Wayne and State of Michigan, have invented a new and Improved Railway-Car, of which the following is a full, clear, and exact description.

The purpose of this invention is to provide means for increasing the seating and carrying capacity of railway-cars and also to more comfortably and conveniently arrange these accommodations, which end I attain by providing a car with two floors, on the lower of which are arranged reception-rooms, toilet-rooms, a parlor, and state-rooms and on the upper of which are arranged sleeping-berths and also apartments in which hand-baggage may be stored.

This specification is the disclosure of one form of my invention, while the claims define the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional view of my invention on the line 1 1 of Fig. 3. Fig. 2 is a similar view on the line 2 2 of Fig. 3. Fig. 3 is a similar view on the line 3 3 of Fig. 2. Fig. 4 is a diagrammatic view illustrating the horizontal framing on which the lower floor of the car is built. Fig. 5 is a diagrammatic view illustrating the vertical framing. Fig. 6 is a view illustrating the convertible seats for the upper floor of the car. Fig. 7 is a sectional view on the line 7 7 of Fig. 3, and Fig. 8 is a similar view on the line 8 8 of Fig. 3.

The main horizontal framing of the car, on which framing the lower floor is built, consists of two outer beams 9, of any desired construction, joined at their extremities by transverse beams 10, which latter beams are located, respectively, at the ends of the car. Situated intermediate the ends of the beams 9 and running transversely between them are a number of beams 11, joined to each other by longitudinally-extending beams 12. These beams 11 and 12 are located inward from the beams 10, so as to form spaces 14, in which are received the trucks 15 of the car, as indicated best in Fig. 3. A number of vertical beams 16 stand on the beams 9 and are joined by intermediate longitudinal beams 17 and upper longitudinal beams 18. Cross-braces 19 (see Fig. 5) may also be provided, as shown, and these cross-braces may be located at any desired point on the car-framing. All of the frame-beams described may be of any desired form. It is preferable, however, to employ I-beams, as shown. I also desire it to be understood that this framing is not an essential part of my invention and may be changed to any other suitable form.

The car is constructed, as indicated best in Figs. 1, 2, and 3, with a main saloon or parlor 20 on its lower floor. This parlor may be provided with chairs and other furniture 21. The floor of the parlor 20—that is to say, the parlor-floor of the car—is located below the upper sides of the trucks, and this floor is also constructed with a passage or corridor 22, leading toward one end of the car and communicating with a number of state-rooms 23, provided with berths 24. These berths may be either in the form of seats convertible into berths or they may be berths in permanent form, as desired. At one end of the car, directly over the truck, (the left-hand end in Figs. 2 and 3,) I provide a smoking-room 25, communicating with a toilet-room 26 for gentlemen and also with an apartment 27, containing washstands and the like. This apartment communicates with a corridor 28, one end of which leads to a door 29, and the other end of which leads to steps 30, passing down into the parlor 20. At the other end of the car (the right-hand end in Figs. 2 and 3) I provide a corridor 31, reached by steps 32, leading up from the corridor 22 and communicating with a ladies' dressing-room 32 and toilet 33. I also provide a ladies' reception-room 34 in communication with the apartments 32 and 33, in which reception-room chairs and other furniture may be arranged as desired. The corridor 31 leads outward to a door 35 at the adjacent end of the car. I further provide side doors 36 and 37, leading into the car intermediate the ends thereof, the door 36 communicating with the parlor 20 and the door 37 with the corridor 22.

The top floor of the car over the parlor 20, the corridor 22, and state-rooms 23 are formed in a single large apartment 38, in which are

arranged a number of berths 39. These berths may be as the berths 24, either chairs convertible into berths or berths in permanent form. I have shown them to be chairs convertible into berths. At each end of the car, at the upper floor thereof, I provide an apartment 40, designed to receive hand-baggage and also useful for various purposes, such as storage and for buffet-rooms. The upper floor is reached by stairs 41 at each end of the car and respectively leading from the corridors 28 and 31. The stairs 41 lead upward to a landing-platform 42, located just below the floor of the upper apartment 38, as shown best in Fig. 3, from which platform 42 stairs 43 lead to the apartment 38 and stairs 44 lead oppositely to the apartments 40.

The car is provided with numerous windows and other orifices for light and ventilation. Thus the lower apartments are lighted by windows 45 and ventilated through openings 46. The upper compartment 38 is lighted by windows $46^a$ and ventilated through openings 47, and the apartments 40 are provided with small openings 48 for light and ventilation. The convertible chairs or seats shown in the present form of the invention are illustrated in detail in Fig. 6, where it will be seen that these devices when adjusted as seats have backs 49 and seats proper, 50. The backs and seats are supported on suitable framings 51, which framings are each formed with vertically-extending spaces therein receiving partitions 52. These partitions may be lowered, as indicated by the full lines in Fig. 6, when the berths are not to be used, and when the chairs are converted into seats the partitions may be raised, as indicated by dotted lines at the left in Fig. 6, thus separating the berths the one from the other. The adjustable or outer edges of the seats proper, 50, are provided with swinging sections $52^a$, adapted to be supported in horizontal position by the hinged legs 53. When the devices are adjusted as seats, the extensions $52^a$ are thrown downwardly, as indicated by the full lines to the left in Fig. 6; but when the seats are to be converted into berths the sections $52^a$ are thrown out horizontally and supported by the legs 53, as indicated by dotted lines at the left in Fig. 6 and by the full lines at the right in said figure. By this arrangement either seats or berths may be furnished. In converting the seats into berths the backs 49 are thrown down over the seats proper, 50, and the extensions $52^a$, thus forming comfortable cushions, on which the passengers may lie. This arrangement avoids the necessity of handling and carrying mattresses for the berths.

Various changes in the form, proportions, and minor details of my invention may be resorted to without departing from the spirit and scope of my invention. Hence I consider myself entitled to all such variations as may lie within the scope of my claims.

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

1. A railway-car, having a frame comprising side sills extending throughout the length of the car, end sills extending between the ends of the side sills, and transoms extending between the side sills intermediate the ends thereof, the transoms being spaced from the corresponding end sills to form a place for the trucks between the transoms and end sills and between the side sills.

2. A railway-car, comprising a lower floor and an upper floor, furnishing two main compartments arranged the one above the other, an end compartment at each end of the lower floor, the end compartments being respectively situated over the trucks and having their floors raised above the lower floor of the car, an end compartment at each end of the upper floor and respectively over the lower end compartment, the floors of the upper end compartments being raised above the upper floor, and stairs in the lower end compartments, such stairs leading up to the upper main compartment and to the upper end compartments.

3. A convertible seat for railway-cars, having a back, a seat proper, a frame on which the seat is mounted, a seat extension hinged to the frame, and a leg pivotally mounted on the seat extension to hold the extension horizontally in line with the seat, the back being capable of folding down on the seat and its extension to form a berth.

THOMAS L. STATE.

Witnesses:
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JAMES V. OXTOBY.