

(No Model.)

J. P. TILLSON.
RAILWAY COACH.

No. 462,517.

Patented Nov. 3, 1891.

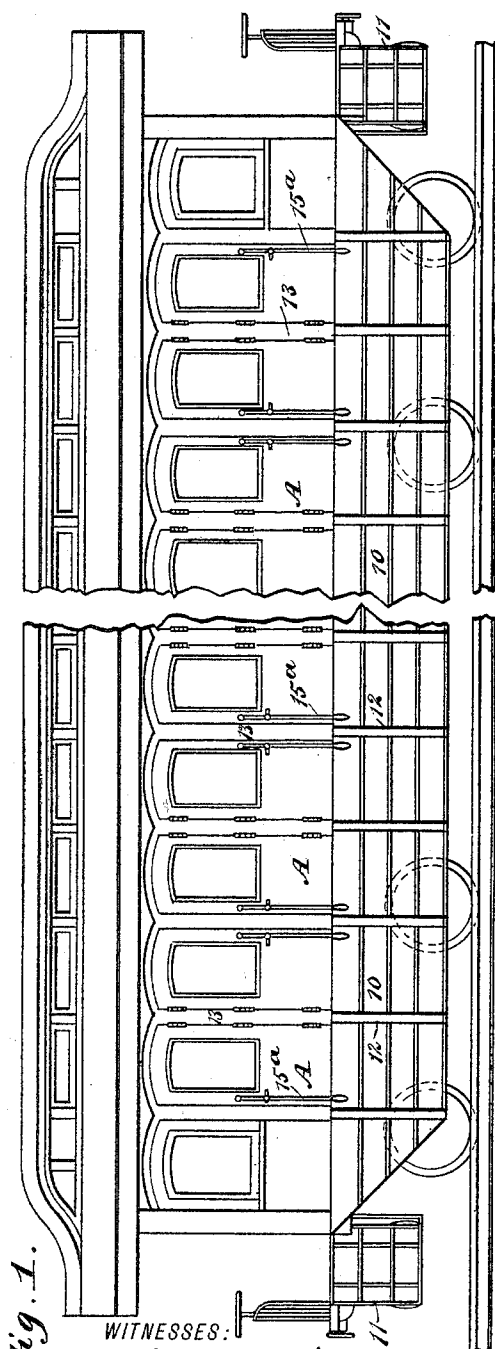


Fig. 1.

WITNESSES:

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Fig. 5.

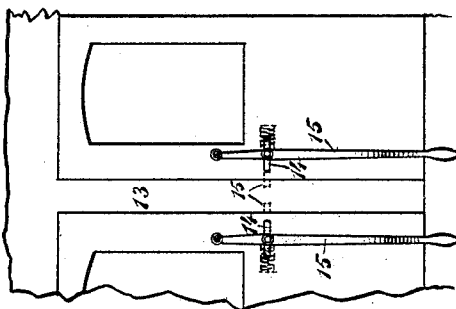


Fig. 4.

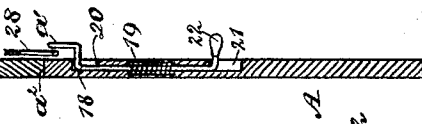


Fig. 2.

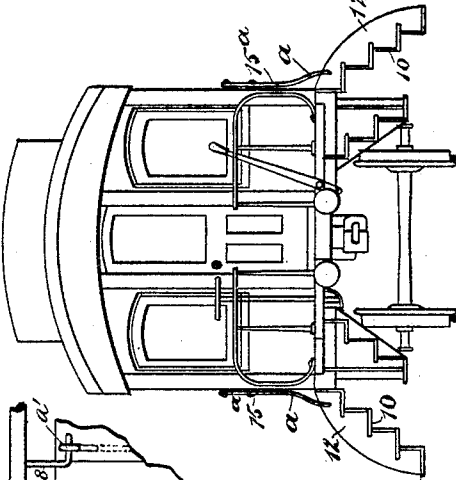
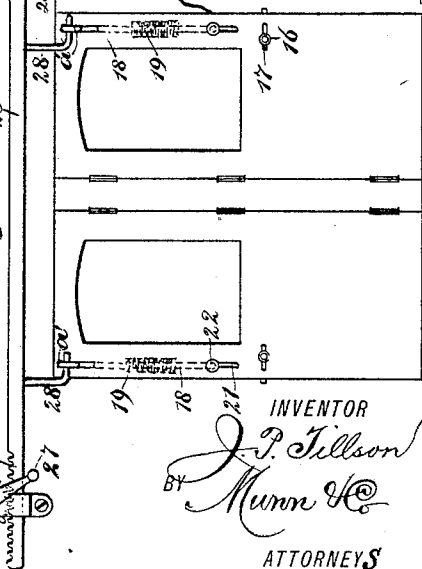


Fig. 3.



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JESSE PAXON TILLSON, OF UNION CITY, OHIO.

RAILWAY-COACH.

SPECIFICATION forming part of Letters Patent No. 462,517, dated November 3, 1891.

Application filed May 12, 1891. Serial No. 392,469. (No model.)

To all whom it may concern:

Be it known that I, JESSE PAXON TILLSON, of Union City, in the county of Darke and State of Ohio, have invented a new and useful
5 Improvement in Railway-Coaches, of which the following is a full, clear, and exact description.

My invention relates to an improvement in railway-coaches, and has for its object to so
10 construct the coach that entrance and exit may be had at the sides thereof, and whereby a door will be located in the side of the car opposite each seat contained within the car; and a further object of the invention is to
15 provide a means whereby all of the side doors may be simultaneously locked or unlocked, and whereby, also, any one of the doors may be unlocked without disturbing the others.

The prime object of constructing a car embodying the improvements above set forth is to provide ample exit in the event of an accident or a fire happening in the car, the side doors being used as auxiliaries, since the car is provided with the usual end doors.

25 The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

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

Figure 1 is a side elevation of a car having my improvements applied thereto. Fig. 2 is an end view of a car so constructed. Fig. 3 is a partial side elevation of the car viewed from the interior. Fig. 4 is a vertical section through one of the doors; and Fig. 5 is an enlarged view illustrating an elevation of a portion of the side of the car, viewed from the exterior.

Steps 10 are constructed at each side of the car, extending from end to end, which side steps are auxiliary to the usual end-platform steps 11, which latter are of the ordinary construction. Each side of the car is provided with a series of doors A, and the doors are hung in pairs, whereby if both doors of a pair

are open their outer surfaces will be brought
50 together. Thus when a single door is opened it will not in the least interfere with the opening of the door at either side thereof. The arrangement of the doors is fully illustrated in Fig. 1. A series of partitions 12 is constructed upon the longitudinal steps 10, and the partitions are so arranged vertically of the steps that a partition will be practically in alignment with each pillar 13 between the doors. Each door is provided with a horizontal spring-actuated latch 14, which is adapted to enter a suitable keeper 15, located in the pillar 13, as is best illustrated in Fig. 5. The latches are operated from the inside by an attached knob 16, as shown in
60 Fig. 3, held to travel in a suitable transverse slot 17, produced in the inner face of the door as the latch-bolt is slid laterally, and the latch-bolts 14 are operated from the exterior of the car through the medium of levers
70 15^a, one lever being pivoted at its upper end to the outer surface of each door above the latch contained therein, and the levers are attached in any suitable or approved manner to the bolts of the latches, the lower ends of the levers being curved outwardly and downwardly, as illustrated at *a* in Fig. 2, whereby said levers may be readily grasped by a person upon the platform of a railway-station without suffering inconvenience from the location of the side steps. Each door is further provided with a vertical bolt 18, located, preferably, to slide in a groove produced in the door, the said groove being above the lower or horizontal latch 14. The bolt 18 is
85 preferably provided with an actuating-spring 19, and the upper end of the bolt is carried from the door into the interior of the car through a suitable opening 20, as shown in Fig. 4, and the upper extremity of the bolt is carried inwardly and upwardly, as illustrated at *a'* in Fig. 4, forming a socket *a'*² between its outer face and the door, as is also best shown in Fig. 4.

The vertical bolts are capable of being operated only from the interior of the car, and their lower ends are carried outward through an opening 21 in the inner face of the door at

the lower end of the groove or channel in which the bolt slides, the projecting lower end of each bolt being provided with a knob or handle 22 of any approved construction.

5 A bar 23 is held to slide upon the inner surface of each side of the car over the upper ends of the doors A. The bars 23 at one or both ends are provided with a toothed surface 24, constituting a rack, which racks or toothed
10 surfaces are engaged by pinions 25, journaled in suitable brackets 26 and turned through the medium of crank-arms 27, attached to the trunnions of the shaft upon which they are mounted, as illustrated in Fig. 3. Each
15 bar 23, which may be termed a "rack-bar," may be operated either independently or simultaneously and collectively. If operated independently, the axles of the transversely-aligning pinions 25 are not connected; but
20 when the bars are operated collectively this may be accomplished by mounting the transversely-aligning pinions upon one shaft.

Each rack-bar 23 has projected downwardly from its under side a series of L-shaped or
25 angular arms 28, the arms being so grouped and located that when the doors are closed and the vertical bolts 18 of the doors are in their upper or normal position, the rack-bars are moved in the direction of one end of the
30 car and the arms 28 of the rack-bars will enter the sockets a^2 , or be located one behind the curved upper end a' of each vertical bolt, thus rendering it impossible for the door to be opened from the outside of the car; but each
35 door may be independently opened by drawing downward its vertical bolt 18 a sufficient distance to disengage it from the rack-arm 28 above it. It will be observed that when all the doors are closed they may be simultaneously
40 locked by carrying the rack-bars 23 in the direction of one end of the car, and they may be quickly unlocked by reversing the movement of said rack-bars.

As heretofore stated, when a car is constructed in the manner described, in the event
45 of a fire in the car or of an accident thereto the passengers located in each seat have a convenient exit at hand. Thus the danger entailed by a number of passengers endeavoring to crowd through the end doors of the
50 car or forcing themselves through the window is avoided.

The car is exceedingly safe, inasmuch as the side doors are kept locked while the train
55 is in motion, and are not unlocked when the train stops, unless parties within the car desire to find an exit at the door at the end of the seat instead of through the end doors of the car. The latch-bolts are also constructed
60 so that even when the rack-bars 23 are in position to lock the doors when the doors are opened and closed they will at the latter movement lock themselves.

I desire it to be distinctly understood that
65 a car constructed as described may be used for street-car service as well as for ordinary

steam-railway service, and also that each door is preferably provided with a window adapted to drop downward in opening.

Having thus described my invention, I claim 70 as new and desire to secure by Letters Patent—

1. A railway-coach having a series of doors in its sides, the doors being in pairs hinged at their adjacent edges to open outward back to
75 back, and a latch for each door operative from within and without the car, substantially as set forth.

2. A railway-coach having a series of doors hung to open outward, a series of vertically-
80 sliding bolts on the inner sides of the doors, and a sliding bar having depending arms engaging the upper ends of the bolts and preventing the doors from swinging outward until the bar is retracted or the bolts pressed
85 down, substantially as set forth.

3. A railway-coach provided with side steps extending, essentially, from end to end, doors in its sides located one at the end of each
90 seat, the said doors being hinged to open outward back to back, and partitions constructed upon the steps dividing the steps into sections, one section for each door, as shown and described.

4. A railway-coach provided with a series
95 of doors in its sides, latches located in said doors and adapted for engagement with keepers in the door-jambs, the said latches being provided with knobs attached to the inner faces of the bolts, and levers attached
100 to the outer faces of the bolts, the said levers being located at the outside of the door and pivoted at their upper ends to the door above the latches, their lower ends being curved, as and for the purpose specified. 105

5. In a railway-coach, the combination, with a coach-body provided with a series of doors in its sides, having latches adapted for engagement with the door-jambs, of bolts held
110 to vertically slide in the doors, the upper ends of which bolts are curved inwardly and upwardly, the lower ends of the said bolts being also provided with knobs, and rack-bars capable of longitudinal movement and located
115 above the doors, said rack-bars having downwardly-extending arms adapted to be interposed between the sides of the car, and the upwardly and inwardly extending ends of the vertical bolts of the doors, as and for the purpose specified. 120

6. In a railway-coach, the combination, with the body thereof, side steps extending practically from end to end of the body, hinged
125 doors forming a portion of the sides of the car, the said doors being adapted to swing outward back to back and being provided with spring-controlled latches adapted to enter keepers in the door-jambs, and means, substantially as shown and described, for manipulating said latches, of bolts held to
130 slide vertically in the doors, the said bolts being provided with knobs extending within

the car and having their upper ends inwardly and upwardly curved, bars held to slide above the doors, one at each side of the car, provided with toothed end surfaces, pinions
5 engaging with the toothed surfaces of the bars, means for rotating the pinions, substantially as described, and arms projected downward from the sliding bars, adapted at

a point in the movement of the bars to enter the spaces between the sides of the car and 10 the upwardly-curved ends of the bolts, as and for the purpose set forth.

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Witnesses:

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