A. L. W. BEGG.

STREET CAR.

APPLICATION FILED NOV. 2, 1916.

1,277,680.

Patented Sept. 3, 1918.

3 SHEETS—SHEET 1.

Fig. 2.

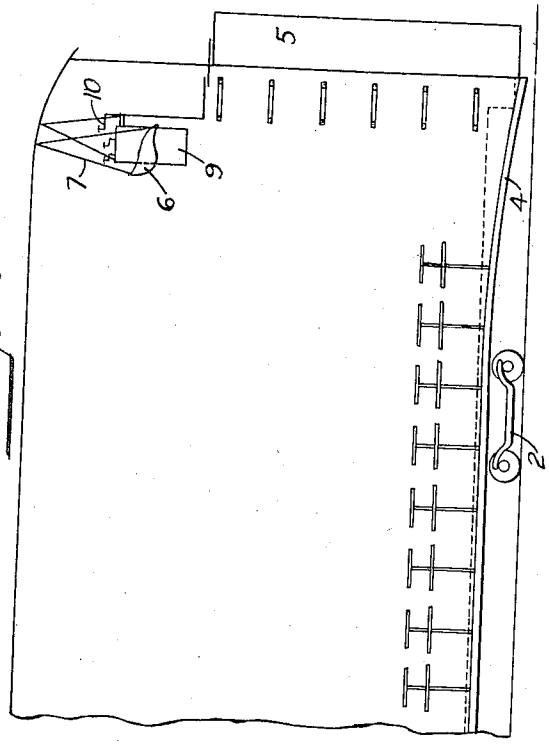


Fig. 4.

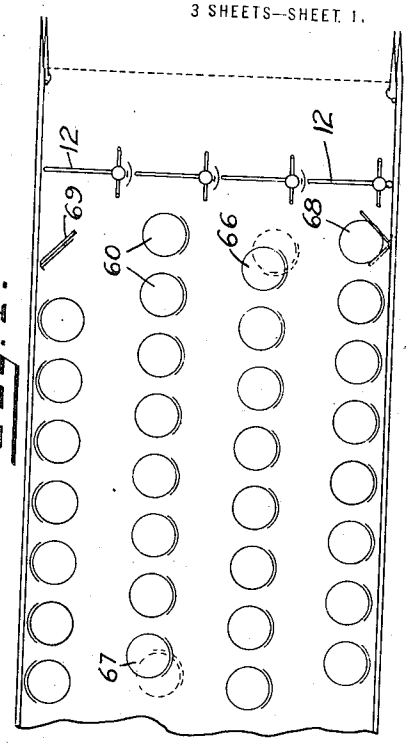


Fig. 1.

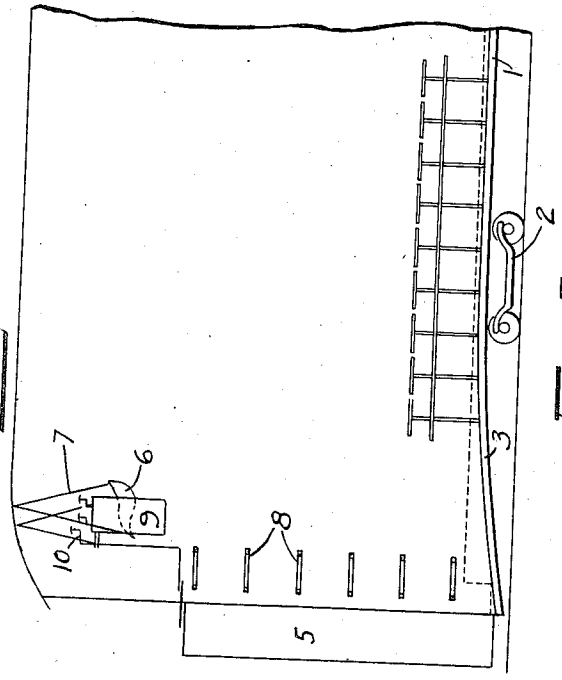
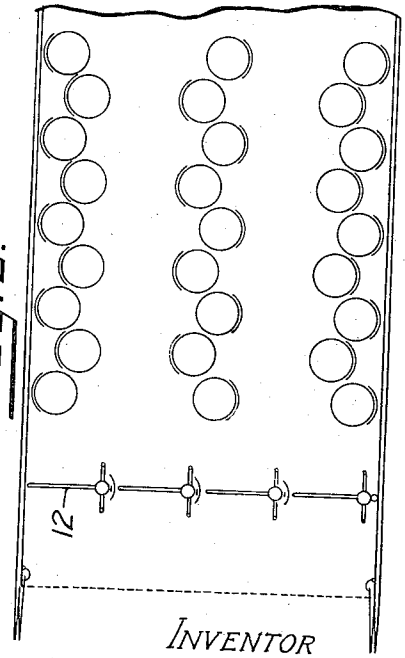


Fig. 3.



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3 SHEETS—SHEET 2.

Fig. 9.

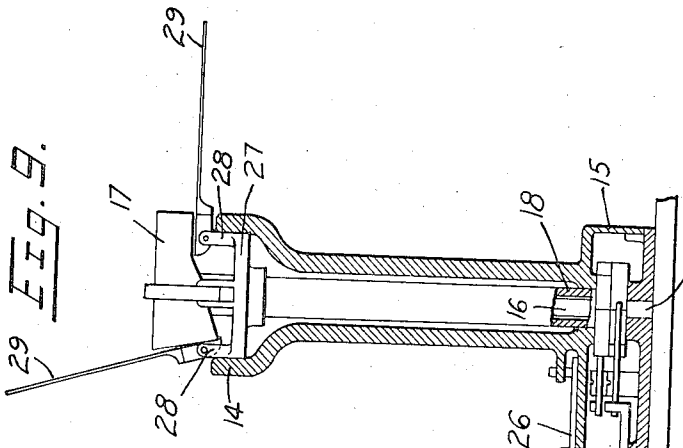


Fig. 10.

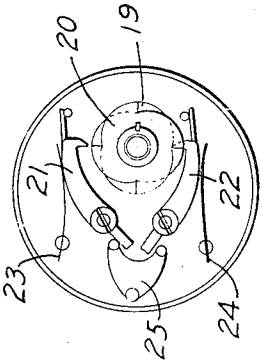


Fig. 6.

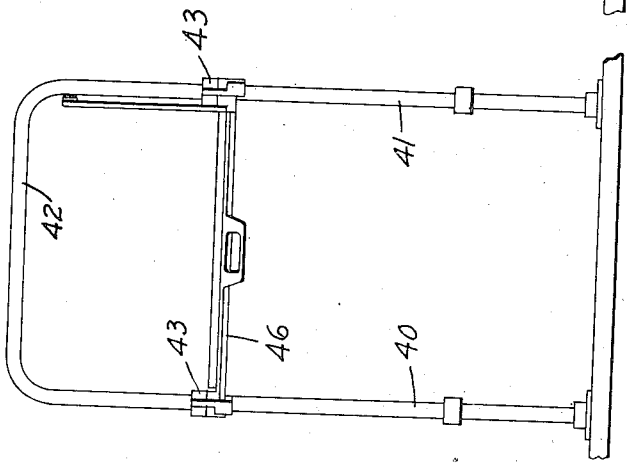


Fig. 11.

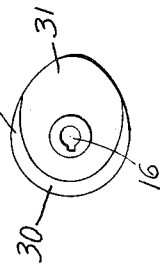


Fig. 8.

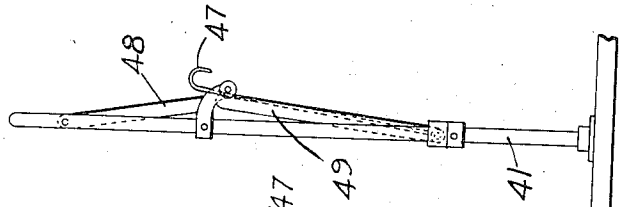


Fig. 7.

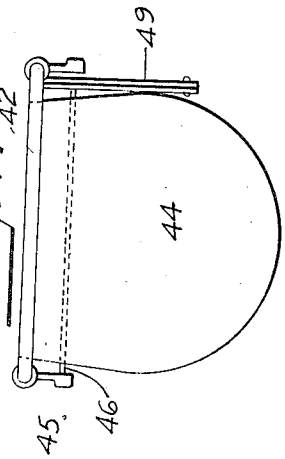
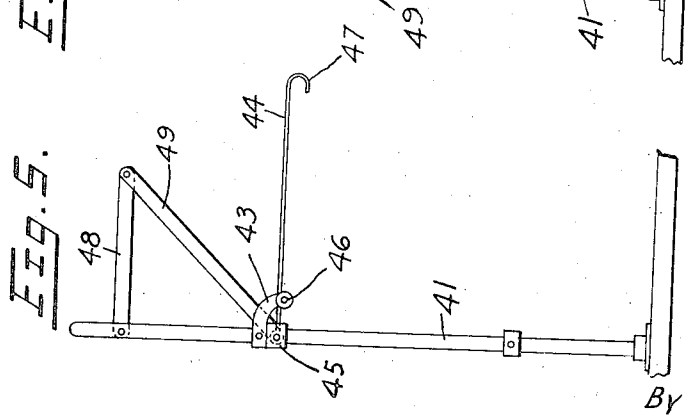


Fig. 5.



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3 SHEETS—SHEET 3.

Fig. 14.

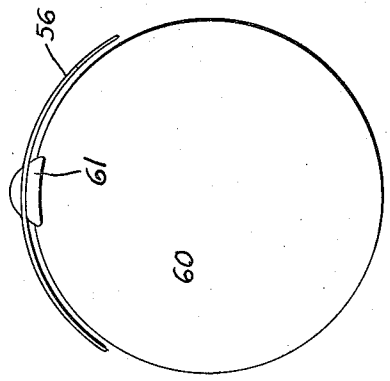


Fig. 15.

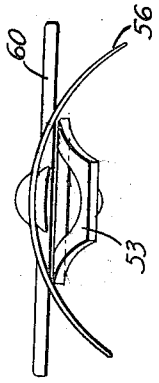


Fig. 16.

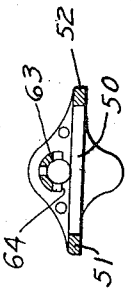


Fig. 12.

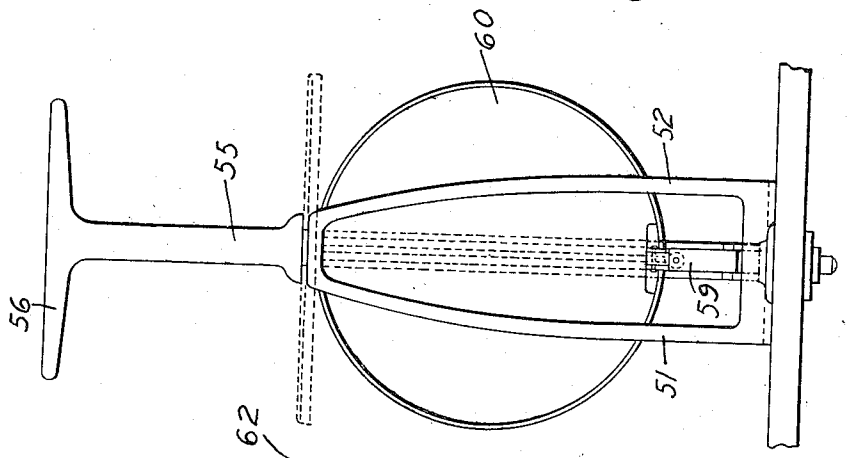


Fig. 17. Fig. 13.

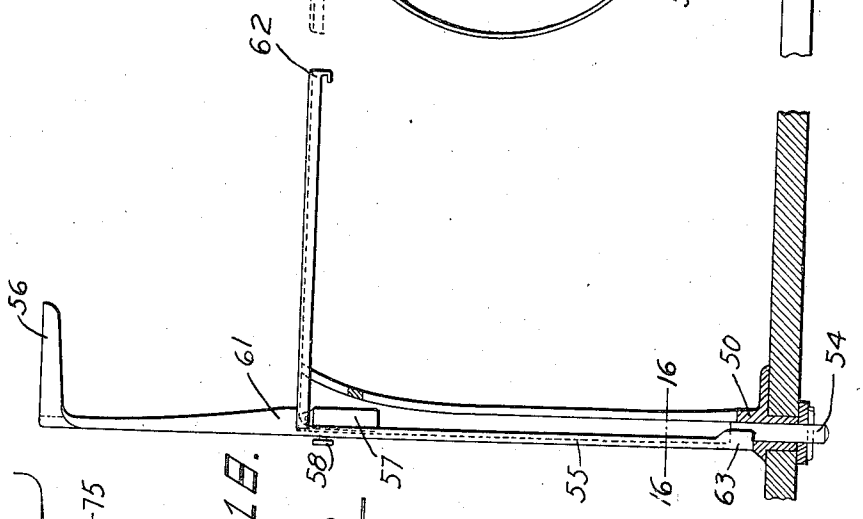
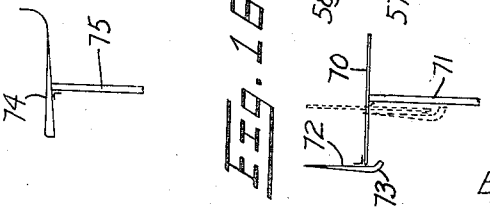


Fig. 18.



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UNITED STATES PATENT OFFICE.

ALEXANDER L. W. BEGG, OF NEW YORK, N. Y.

STREET-CAR.

1,277,680. Specification of Letters Patent. Patented Sept. 3, 1918.

Application filed November 2, 1916. Serial No. 129,046.

To all whom it may concern:

Be it known that I, ALEXANDER L. W. BEGG, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Street-Cars, of which the following is a specification.

This invention is an improvement in transportation means, being a moving thoroughfare, the purpose of which is to enable foot passengers to be carried *en masse* without incidental interruption or interference with freedom of movement, either while boarding, or debarking, or between the entrance and exit.

To this end I provide a covered vehicle or series of them, being normally wide open at each end and through which opening there is uninterrupted space for ingress and egress, and to which freedom of movement, the internal arrangements are primarily and altogether devoted.

To this sole end, of uninterrupted movement is provided stiles at either end whose form is specifically arranged to allow of the full width of the cross section in passing through them of passengers.

I also provide to this sole end, chairs, the seats of which are normally quite within the limited space of their upright supports, thereby opposing no hindrance or obstacle to free movement throughout the whole lateral extent of the vehicle, while going from front to the rear.

Also, to this end is provided an elevated compartment above the heads of the entering passengers for the accommodation of the motorman.

In the accompanying drawings illustrating embodiments of my invention, Figures 1 and 2 are sections of end portions of the car. Figs. 3 and 4 are plan views of end portions of the car. Fig. 5 is a side elevation, and Fig. 6 a front elevation of one of the chairs. Fig. 7 is a plan view of this chair. Fig. 8 shows the chair in the folded position of the seat and arms. Fig. 9 is a vertical section, partly in elevation of one of the turnstiles. Fig. 10 shows the reversible pawls for the turnstile. Fig. 11 shows the cam for the turnstile. Fig. 12 is a front elevation, and Fig. 13 a side elevation, partly in section, of a modified chair. Fig. 14 is a plan view of the same chair in the open position, and Fig. 15 shows the same in the folded position. Fig. 16 is a cross section on the line 16—16, indicated in Fig. 13. Figs. 17 and 18 are diagrammatic views of a form of chair.

As shown in Figs. 1 and 4, the body of the car has its floor 1 level between the trucks 2, 2, and the floor slopes downward from each truck to the adjacent end, as shown at 3 and 4. This brings the car floor near to the ground and provides a convenient incline, so that the passengers have only a low step to reach the floor and do not have to climb several steps as in the present form of cars. At each end of the car, are provided folding doors 5; that when opened provide entrance and exit the entire width of the car, as shown in Figs. 3 and 4. Since vehicles of this character are often required to reverse their direction on a return trip, and each end is alternately front and rear, means are provided for the motorman at both of the ends. I arrange a chair or compartment for the motorman at the end of the car in elevated position, so that the passengers can have free movement to and from the car end. As shown I support or suspend a seat 6 at each end, by bars 7 from the top, or other suitable means, and access to this seat may be had by a kind of ladder 8 on the side of the car. The usual controller and brake-member 9 is arranged adjacent this seat. The door 5 at such end can be opened and closed by a lever 10 near the seat. By this means, when the car stops the motorman will open the door for entrance of the passengers, and when they have passed into the car, he can close this door. Suitable means can also be provided for controlling the door by the conductor when such end of the car is the rear.

In order to compel the passengers to leave the car by the rear and not by the front, I provide at both ends a lateral series of turnstiles 12. These are provided with means, which are reversible, so that they can turn in either direction only, whereby the passenger must enter at the front but not leave, and must leave at the back. As shown each turnstile has its arm 13 extending to the standard 14 of the adjacent one, except the end one that extends to the side of the car. Therefore, these members are arranged whereby when the arm is brought around to the opposite side on the return movement, it can fold to an upright position and not interfere with the movement of the passenger

at the said adjacent arm. As shown in Figs. 9 and 11, I provide a tubular standard 14 having a chambered base 15. A shaft 16 is secured in the base and projects upwardly, and carries a cam 17 at its upper end, shown separately in Fig. 11 by a plan view. A sleeve 18 surrounds the shaft 16 and carries a pair of ratchet disks 19 and 20 at the lower end in the casing 15. These disks are engaged, respectively, by pawls 21 and 22 in the chamber that are pressed against the disks by springs 23 and 24, respectively. A control block 25 in the casing engages the rear ends of these pawls alternately when swung to hold either of the pawls away from the ratchet disks. As these ratchet disks have their teeth inclined in the opposite direction, and the pawls alternately engage the disks, rotation of the disks and sleeve 18 is always prevented in one direction, according to the position of the block 25. The cover 26 of the chamber can be secured to prevent access to the block except by authorized persons. At the end of a run when it is desired to reverse the direction of the turnstile or sleeve 18, the conductor or other employee who has access to the control, will shift the block 25. At its upper end the sleeve 18 carries a head 27, having four trunnions 28 disposed a quadrant's distance apart. In each of these trunnions swings an arm 29 that engages the cam 17 at its inner portion. The cam has an overhanging portion 30 that will cause the arm 29 to assume the horizontal position during half of its revolution, as indicated in Fig. 9. This cam has a downwardly extending portion at 31 that will engage the inner portion of the arm and compel it to swing to an upright position, as shown in this view, during the remaining half of the revolution. This cam member is so arranged that the arm remains in the upright position when engaged by the passenger to enter or leave the car. There being a series of these arms, the succeeding quarter revolution of the next arm will cause the arm previously engaged by the passenger to shift to the upright position. By this means the arm will not project to the opposite side where it would obviously interfere with the arm of the adjacent turnstile, and compel passage in the opposite direction. Thus each passenger will enter the space between the turnstile and the adjacent one, from which the arm engaged by the passenger will extend, as clearly shown in Figs. 3 and 4.

In Figs. 5–8, I show a form of chair comprising a frame having two upright posts 40 and 41 connected by horizontal portion 42 at the top. On each post is secured a bracket 43 to which is connected a seat 44. The rear of the seat at each side is secured to swing the seat to an upright position. A rod 46 extends across between the brackets 43 beneath the seat, and when the seat is released by the passenger rising, the weight 45 will tend to move the rear portion of the seat downwardly. Hence the seat will have a turning and sliding movement on the rod 46, whereby its rear portion moves downward from the position of Fig. 5 to that indicated in Fig. 8. This will bring the seat to an upright position and fold it into close proximity to the posts 40 and 41. When it is desired to use the seat again, it is grasped at the handle portion 47 and pulled upwardly and outwardly to the former position to receive the passenger. I also provide this chair with an arm device, preferably on one side only, although obviously it can be duplicated on the opposite side. A bar 48 is hinged to the post 41, and its outer end is hinged to a bar 49. The latter at its lower end is pivoted to the seat 45. In normal or active position of the seat the bars 48 and 49 will project along one side of the seat and form a convenient arm, or a kind of back if the passenger sits sidewise on the seat. As soon as the seat is released and the weights 45 descend, obviously the bar 49 will be carried downward to swing the bar 48 also downward, and these two will fold adjacent the post 41, as shown in Fig. 8. It will also be understood that the weight of these two bars will assist in forcing the seat 45 downward, to bring these members to the upright folded position.

In Figs. 12–16 I show a modification of this form of chair, whereby when the passenger rises will automatically swing to an upright position adjacent the back or standard. This chair comprises a base member 50 that may be extended to enter the floor. The base has an upright pair of arms 51 and 52 connected at the top by a portion 53. As shown in these views the arms 51 and 52 are deflected forward at the upper portion and also curved toward each other. The base 50 is tubular, in which turns a rod 54. This rod is connected with or forms a part of a standard 55 that is shown as slotted in its lower portion. This standard extends upwardly and is provided with a kind of back rest 56 in the form of a cross arm as shown, that may be curved if desired. A weight 57 has a projecting bolt 58 at the rear that slides in the slotted portion 59 of the standard, from the position of Fig. 13 downward to the position of Fig. 12. To this weight 57 a seat 60, preferably of circular form, is hinged at the rear of the seat. The seat will rest on the top portion 53 of the arms 51 and 52 in its position of use, and the rear hinged portion will engage a shoulder 61 of the standard 55, that will prevent upward movement of the seat. But as soon as the seat is released by the passenger rising, the weight 57 will slide downwardly, and the seat will swing upwardly and inwardly on the cross

piece 53, until the weight draws the seat downward between the two arms 52 and the standard 55, as indicated in Fig. 12. This will bring the seat to a substantially vertical position and against the standard, so that it will occupy very little space. When desired for use, the passenger will grasp the outer edge or hook portion 62 of the seat and pull it upwardly and then outwardly to bring it to the horizontal position for use. But as soon as released the weight 57 will fall and return the seat to the folded upright position. As shown the rod 54 can swing in the base 50, the standard and also the seat can be swung a certain distance, which is limited by reason of the curved portion 63 on the lower end of the standard engaging a curved portion 64 of the base 50 as indicated in Fig. 16. The length of the curved portion 63 is, of course, proportionate to the amount of swing of the seat. But when the seat has been turned to either side, and is then released by the passenger, the guide movement of the seat against one of the arms, either 51 or 52, in the turned position, will cause the seat and standard 55 to swing back to the normal position, so that the seat will assume the upright position engaging both of the arms 51 and 52 in the folded position.

In Figs. 2 and 4 I show one portion of the car having the chairs 60 arranged in rows extending longitudinally and which are staggered in the adjacent rows. At 66 and 67 the chairs are indicated as being swung from their normal position. In this view I show a chair at 68 corresponding to the chair shown in Fig. 5; while at 69 the same form of chair is shown in the folded position, as set forth in Fig. 8.

In Figs. 1 and 3 I show the chairs arranged in three double rows extending longitudinally, along the middle and at each side of the car. The side rows are shown with the backs adjacent the side of the car. In each of the double rows of seats, it will be observed that the two rows have a staggered arrangement, and the lateral distance apart of the center line of the two rows, is substantially one-fourth of the distance apart, center to center, of the seats in each row. This I find gives the maximum seating capacity and convenience to the passengers, they having their feet extending between the two adjacent seats. When the passengers leave the seats they will fold upwardly at once and thereby vastly increase the available walking space. By having the form of seats arranged to swing slightly, they can be turned to cause the passenger to somewhat face forwardly, according to the direction of movement of the car.

It will also be seen that the arms 29 of the turnstiles, of which four are shown, will completely close the car at each end, and the passengers on the platform, or front end of the car beyond the turnstiles, are compelled to pass through the turnstiles to enter the main portion of the car, and occupy the seats. These turnstiles at one end will have the ratchets and pawls to compel entrance at the front end, and the doors 5 at such end are opened at the proper time by the motorman to admit the passengers. The turnstiles at the opposite end will have the ratchets and pawls at this time arranged to permit exit only. The conductor will collect the fares and the passengers move by these rear turnstiles, ready to leave the car as soon as the rear door 5 is opened by the conductor. But these turnstiles will not admit passengers and hence no passengers are permitted to enter at this end by the conductor. In Fig. 18 a form of chair is shown diagrammatically in which the seat 70 is hinged on a post 71, and has a back 72 hinged at the rear of the seat. When released by the passenger the weight of the back will swing the seat to the upright position adjacent the post. The seat 72 is weighted in the lower end 73 and maintains this upright position to fold against the seat when in the upright position. Hence the seat and back will both maintain a vertical position adjacent the post, in which they are both swung by gravity as soon as released by the passenger. In Fig. 17 the seat 74 weighted at one side and hinged to support 75, swings to the upright position when the passenger rises, the other side being curved upward to form a back support.

Having thus described my invention, what I claim is:—

1. A street car provided with a series of longitudinal rows of seats with the adjacent rows spaced to provide aisles therebetween, one end of the car having turnstiles arranged to control all of said aisles.

2. A street car provided with a series of longitudinal rows of seats with the adjacent rows spaced to provide aisles therebetween, both ends of the car having turnstiles arranged to control all of said aisles, controlling means on the turnstiles at each end of the car for causing them all to move in the same rotative direction but which is reversible.

3. A street car provided with a series of longitudinal rows of seats with the adjacent rows spaced to provide aisles therebetween, one end of the car having turnstiles arranged to control all of said aisles, and a compartment for the motorman at the end of the car in an elevated position, whereby to permit unobstructed entrance and exit for the passengers at the end of the car.

4. A street car provided with a plurality of rows of seats extending longitudinally to provide aisles between the rows, turnstiles at the end of the rows, each turnstile

comprising a post, arms rotatively mounted on the post, and guiding means whereby in the revolution of the arms around the post they will each project outwardly to control passage to or from the aisles and will assume an upright position during the balance of the revolution.

5. A street car, having the floor substantially level throughout the main portion, such floor extending downwardly for the full width of the car in a gradual declivity at one or both ends whereby to form a low step for the passengers in close proximity to the ground.

6. In a street car, in combination, a door comprising essentially the entire width of the car end, and a motorman's seat located above the door whereby to permit free entrance and exit of the passengers beneath the seat.

7. In a street car, in combination, a plurality of rows of seats which normally assume an upright position by gravity and turnstiles at the end of the rows, for the purpose described.

8. In a means for transportation, in combination, a car provided with one or both of its ends wholly open for entrance and exit of passengers, one or more turnstiles arranged at one or both ends of the car, an elevated compartment for a motorman at one or both ends of the car, and one or more seats in the car that are normally in an upright position when not in use.

9. In a means for transportation, in combination, a car provided with one or both ends wholly open for entrance and exit of passengers, an elevated compartment for the motorman at one or both ends, landing platforms located at said ends and extending the whole width of the car, the floors at the ends being inclined downwardly toward each end to form a low step for the passengers.

10. In a means for transportation, in combination, a car having entrance and exit means at each end thereof extending the entire width of the car and arranged at a single step distance from the ground, the floor of the car being inclined upwardly from said ends, and merging into the main floor of the car between the ends.

11. In a street car, in combination, a plurality of rows of seats which normally assume an upright position by gravity and which form aisles, and turnstiles at the end of the aisles, for the purpose described.

ALEXANDER L. W. BEGG.