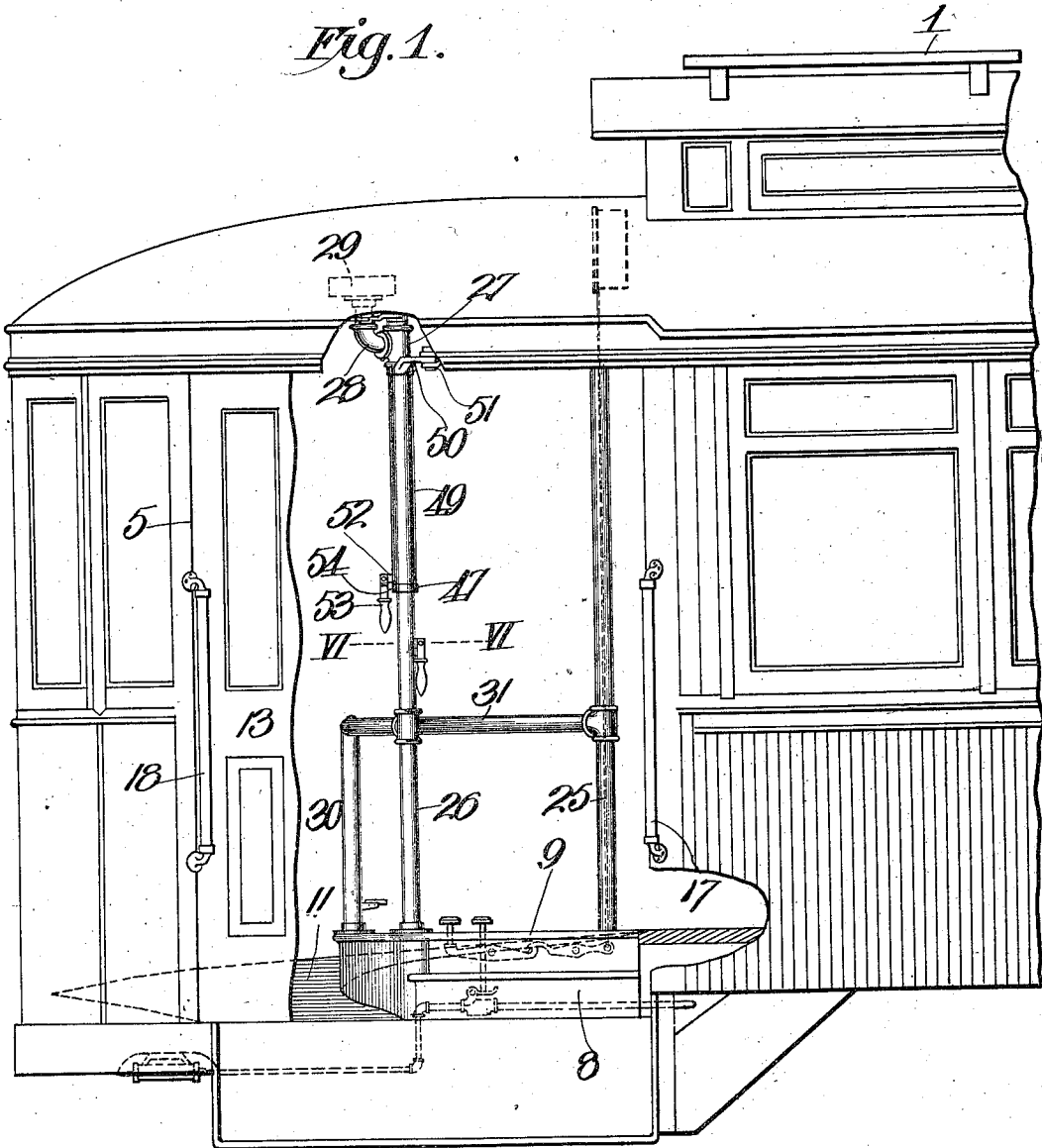


1,013,376.

Patented Jan. 2, 1912.  
3 SHEETS—SHEET 1.

*Fig. 1.*



*Witnesses*  
*Frank Blom*  
*H. Rodgers*

*Inventor*  
*C.C. Crewson*

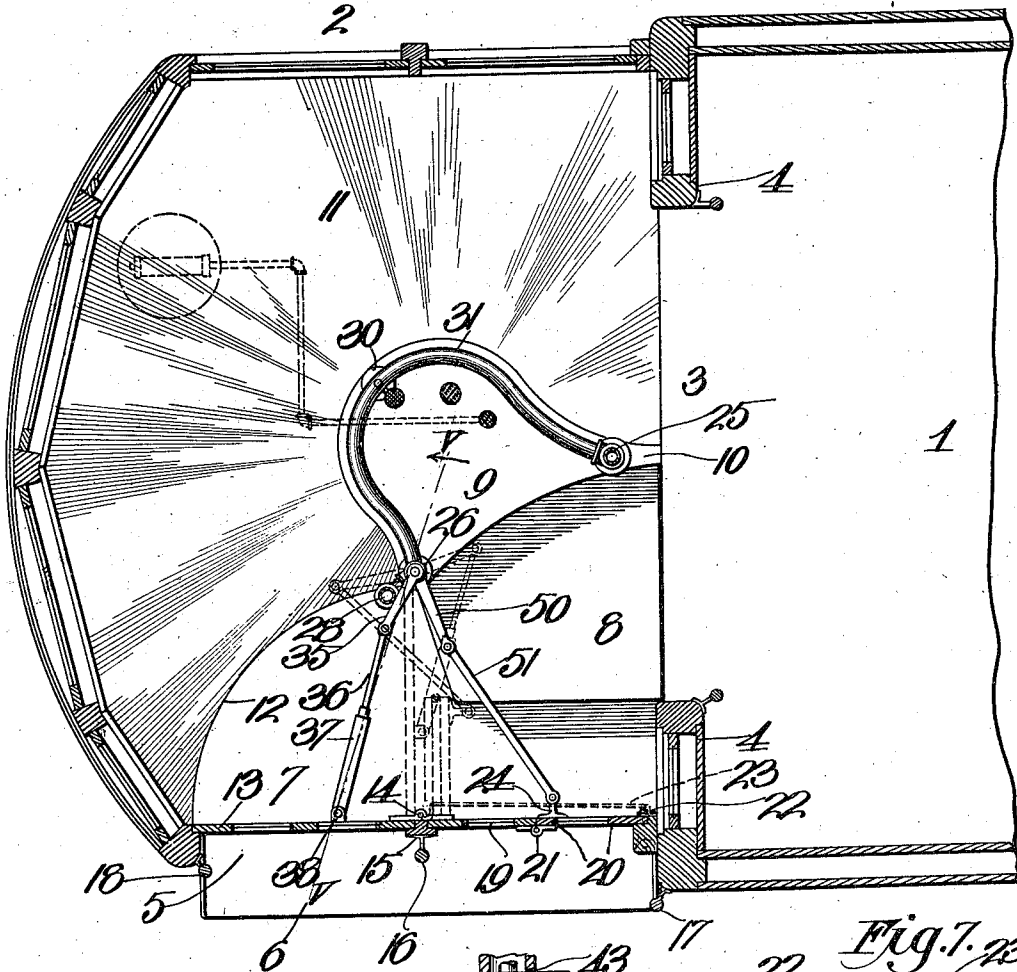
*By George F. Thorpe Atty.*

1,013,376.

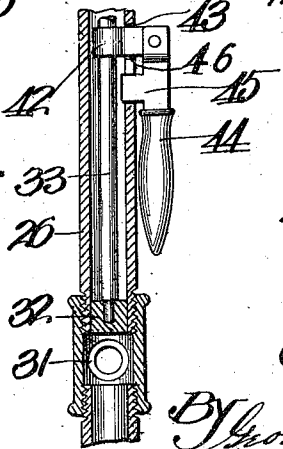
Patented Jan. 2, 1912.

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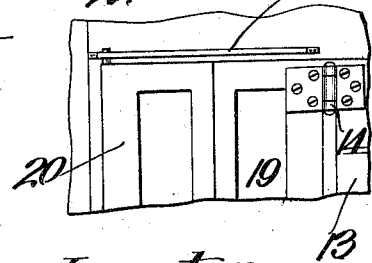
*Fig. 2.*



*Fig. 4.*



*Fig. 7.*



Witnesses  
Frank R. Stone  
H. C. Rodgers

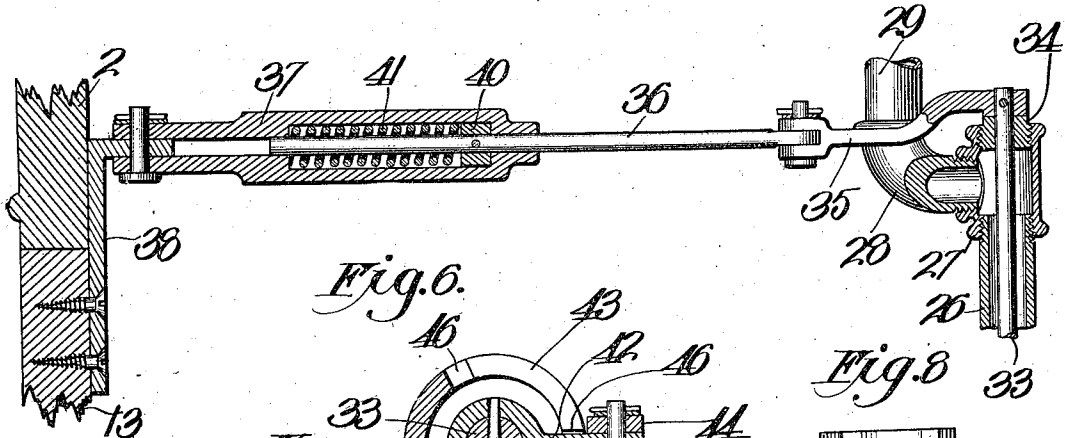
Inventor  
C. C. Crewson  
By *George H. Thompson* Atty.

1,013,376.

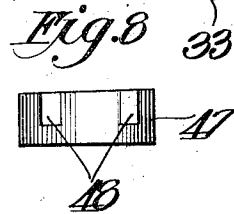
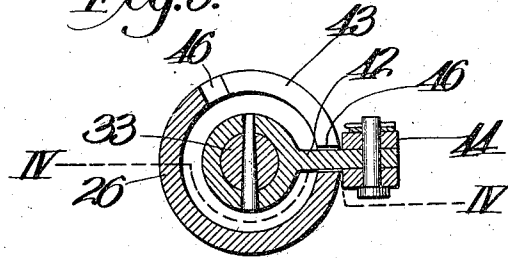
Patented Jan. 2, 1912.

3 SHEETS—SHEET 3.

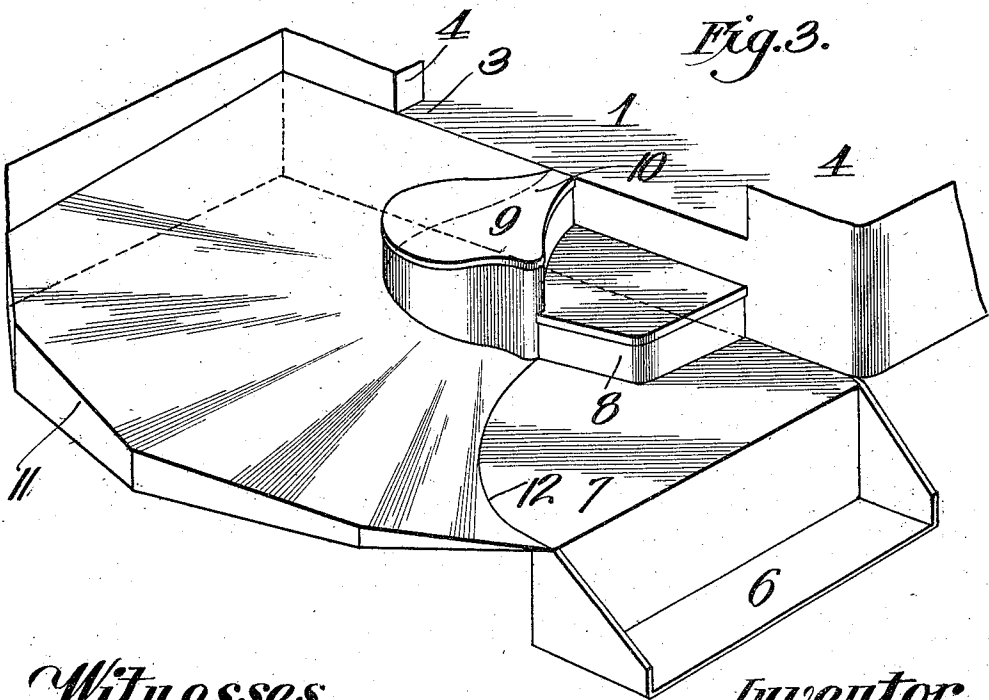
*Fig. 5.*



*Fig. 6.*



*Fig. 3.*



*Witnesses*  
*Frank R. Hon.*  
*A. C. Rodgers.*

*Inventor*  
*C. C. Crewson*

*By George F. Thorpe Atty.*

# UNITED STATES PATENT OFFICE.

CHARLES C. CREWSON, OF KANSAS CITY, MISSOURI.

## STREET-CAR.

1,013,376.

Specification of Letters Patent.

Patented Jan. 2, 1912.

Application filed May 15, 1911. Serial No. 627,363.

*To all whom it may concern:*

Be it known that I, CHARLES C. CREWSON, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Street-Cars, of which the following is a specification.

This invention relates to street cars of the pay-as-you-enter type, and has for its object the production of a car having an end portion or vestibule provided with an inclined floor rising gradually from the level of the platform entrance to the plane of the floor of the car body. An inclined floor for the vestibule has two chief advantages: it tends to induce the passengers to enter the car body as they will find it uncomfortable to stand for any period of time upon the incline, and it permits of a car being built with its entrance considerably lower than that of the present type of cars and thus reduces the height of the step from the ground and the entranceway.

A further object is to provide the conductor with a small pedestal or stand elevated above the greater portion of the inclined floor, and at the same elevation as the floor of the car body, to enable him to more clearly observe the passengers entering and leaving the car at the rear end and those approaching the car with the intention of entering the same.

A further object is to provide a car with either no rear bulkhead or partition between its body and the rear vestibule or narrow bulkheads at each side so that the conductor's view of the interior of the body of the car will be unobstructed to enable him to be readily signaled and to be clearly heard in announcing street intersections.

Another object is to provide a step between the entrance side of the platform and the conductor's stand and the floor of the car body to enable passengers leaving the car body to do so with greater ease and convenience than would be the case if such step were not provided.

Another object is to provide means controllable by the conductor on his stand, for opening and closing the door controlling entrance to the car, or the door controlling exit from the car.

With these and other objects in view as hereinafter appear, the invention consists in certain novel and peculiar features of construction and organization as hereinafter

described and claimed; and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1, is a side view of the rear end of a car embodying my invention, partly broken away, to expose features otherwise hidden. Fig. 2, is a horizontal section taken just below the roof of the extension or vestibule of the car body. Fig. 3, is a detail perspective view illustrating more particularly the preferred construction of the lower part of the vestibule and showing its relation to the floor of the car body. Fig. 4, is a vertical section on the line IV—IV of Fig. 6, to more clearly disclose the handle by which the entrance door is opened or closed and secured in such positions. Fig. 5, is an enlarged vertical section on the line V—V of Fig. 2. Fig. 6, is an enlarged horizontal section on the line VI—VI of Fig. 1. Fig. 7, is a view of the inner side of the double door and adjacent parts. Fig. 8, is a side view of the notched collar constituting an element of the means for locking the double door in closed or open position.

In the said drawings, 1 indicates the body of a street car, and 2 the extension or vestibule thereof, 3 indicating the opening between the body and the extension or vestibule.

4 indicates end walls or bulkheads which extend inwardly from the sides of the car body at its junction with the extension or vestibule, though these bulkheads are not indispensable.

At its outer side the vestibule has a side opening 5, and adjacent thereto the customary side step 6 for convenience in entering and leaving the car. The floor of the vestibule adjacent to the side opening is located a considerable distance below the plane of the floor of the body of the car and is identified by the reference character 7, and to enable persons leaving the car to do so with the greatest convenience, a step 8 divides the space between the platform 7 and the floor of the body of the car outward of the longitudinal center of the latter. At the inner side of said step 8 is the conductor's stand 9, the same being substantially U-shape in plan view and disposed in substantial alignment with the longitudinal center of the car and flush with the floor thereof, that portion of the stand extending forwardly to the floor of the car tapering as at 10, so as to leave as

much unobstructed space as possible between it and the bulk-heads.

11 indicates an inclined floor extending from platform 7 around the stand 9 to the floor of the car at the left-hand side of said stand, this floor tapering gradually from the plane of platform 7 up to the plane of the floor of the car and constituting the path which the passengers must follow to enter the car, and in this connection it will be noted that the conductor upon the elevated stand will have all of the passengers under observation, it being further noted that the bulkhead at the left hand side of the car will compel the passengers in entering the body of the car, to approach within reaching distance of the conductor and thus reduce the chance of any one entering without paying his fare. The entrance end of the inclined floor preferably describes a curve 12, corresponding to that which the entrance door 13 describes in opening and closing, said door being hinged at 14 to a standard 15, extending from the platform 7 to the upper part of the vestibule, and secured to said standard is a handle 16 to be grasped by passengers in stepping into or from the car, similar handles 17 and 18 being secured to the car at opposite sides of the doorway.

19 indicates a door controlling the exit from the car, hinged to standard 15 coincidental with door 13, and adapted to swing inwardly.

20 is a door hinged at 21 to door 19, to swing outwardly, the two doors constituting a folding door of the type in common use on street cars, and said door or member 20 is provided at its inner corner with a pin or roller 22 engaging a horizontal guide bar 23 secured to the vestibule just above the door opening, so that when the double door is opened, the free end of the door member 20 will move in a plane longitudinally of the car from a point adjacent to the car body to a point adjacent to the standard 15, as indicated in Fig. 2, and projecting inwardly from door member 20 near its hinged edge, is a bracket 24, for a purpose which hereinafter appears.

25 is a tubular post extending from the conductor's stand 9 near the body of the car, nearly to the top of the vestibule and secured rigidly in position in any suitable manner. Near the outer corner of the stand, a tubular post 26 is erected thereon, and secured to the post 26 adjacent to its upper end, is a coupling 27, connected by an elbow 28 to the roof of the vestibule as at 29. 30 is a third post secured upon the stand 9, the same being about waist high, and secured upon said post and at its ends to posts 25 and 26, is a U-shaped railing 31, which prevents passengers from encroaching on the conductor's stand and also serves as a protection for the conductor. For the purpose of opening and

closing the entrance door 13, the following construction is provided: 32 is a plug secured in post 26 and forming a journal for the lower end of a shaft 33 extending up through post 26 and coupling 27, and journaled in and projecting above a plug 34 secured in the upper end of said coupling, and secured upon the upper end of said shaft is a crank arm 35 pivotally connected to a rod 36, extending slidably into a slotted sleeve 37, pivotally connected to an angle bracket 38, secured to and projecting upward from door 13, and adapted when the door is closed to bear against a part of the door frame of the vestibule 2, as shown in Fig. 5. 40 is a collar secured on rod 36 within the slotted sleeve and 41 is an expansion spring surrounding the rod and bearing at one end against said sleeve and said collar for the purpose of acting as a cushion as the door is closed, the spring being adapted to yield should an object be caught between the door and casing as the former is closed. The shaft 33 is provided with a short rigid arm 42, projecting through and adapted to swing horizontally in a horizontal slot 43 in post 26, and at each end of and below said slot are openings 46 in the post. To operate shaft 33 in one direction to close the door and in the reverse direction to open it, a handle 44 is pivoted to the outer end of arm 42 and normally hangs pendent therefrom. The handle is provided with a lug 45 normally engaging one of the openings 46 to lock the door open, and adapted to engage the other opening to lock the door closed. When it is desired to operate the door if locked in either position, the handle is swung upward to withdraw lug 45 from the opening 46 with which it is engaged. The handle is then swung to the right or left and thereby turns the shaft. When the handle is released it swings downward to a pendent position and its lug 45 enters the other opening 46.

For the purpose of opening or closing the double door, the following mechanism is provided: 47 is a collar secured on post 26 a suitable distance above arm 42 provided with a pair of spaced notches 48. Journaled upon post 26 and resting upon said collar is a sleeve 49, provided at its upper end with a crank arm 50, pivotally connected by a link 51 to bracket 24 of the double door. Near its lower end the sleeve 49 is provided with an outwardly projecting lug 52, to which a handle 53 is pivotally connected for movement in a vertical plane, said handle having a lug 54, adapted to engage either of the notches 48 of collar 47, and thus lock the double door in closed or open position, it being understood that by raising said handle to a horizontal position, it can be utilized to rotate sleeve 49 and thus through the connections described swing the door in the desired direction.

From the above description it will be apparent that I have produced a street car embodying the features of advantage enumerated as desirable and I wish it to be understood that while I have illustrated and described the preferred embodiment of the invention I do not desire to be restricted to the exact details of construction shown and described as obvious modifications will suggest themselves to one skilled in the art.

I claim:

1. A car, comprising a body having a substantially level floor and an end extension or vestibule provided with a side opening, and an inclined or sloping floor extending upward from the plane of the bottom of the side opening to the plane of the car floor.

2. A car, comprising a body having a substantially level floor and an end extension or vestibule provided with a side opening, an inclined or sloping floor extending upward from the plane of the bottom of the side opening to the plane of the car floor, and a bulk-head projecting inwardly from the left side of the car at the rear end of the body thereof.

3. A car, comprising a body having a substantially level floor and an end extension or vestibule provided with a side opening, a conductor's stand in the end extension or vestibule, and an inclined or sloping floor extending upward from the plane of the bottom of the side opening to the plane of the car floor, said inclined or sloping floor being bowed with the hollow side of the bow disposed forwardly and to the right.

4. A car, comprising a body having a substantially level floor and an end extension or vestibule provided with a side opening, a conductor's stand in the end extension or vestibule, an inclined or sloping floor extending upward from the plane of the bottom of the side opening to the plane of the car floor, said inclined or sloping floor being bowed with the hollow side of the bow disposed forwardly and to the right, and a bulk-head projecting inwardly from the left side of the car at the rear end of the body thereof.

5. A car, comprising a body having a substantially level floor and an end extension or vestibule provided with a side opening, a conductor's stand in the extension or vestibule adjacent to the rear end and in line with the center of the said body, and an inclined or sloping floor extending upward from the plane of the bottom of the side opening to the plane of the car floor, and curving around the conductor's stand from a point rearward to a point to the left thereof.

6. A car, comprising a body having a substantially level floor and an end extension or vestibule provided with a side opening, a conductor's stand in the extension or vesti-

bule adjacent to the rear end and in line with the center of the said body, an inclined or sloping floor extending upward from the plane of the bottom of the side opening to the plane of the car floor and curving around the conductor's stand from a point rearward to a point to the left thereof, and a suitably-supported railing above and extending around the stand at the rear and left side of the same.

7. A car, comprising a body having a substantially level floor and an end extension or vestibule provided with a side opening, a conductor's stand in the extension or vestibule adjacent to the rear end and in line with the center of the said body, an inclined or sloping floor extending upward from the plane of the bottom of the side opening to the plane of the car floor and curving around the conductor's stand from a point rearward to a point to the left thereof, a suitably-supported railing above and extending around the stand at the rear and left side of the same, and a bulk-head projecting inwardly from the left side of the car at the rear end of the body thereof.

8. A car, comprising a body having a substantially level floor and an end extension or vestibule provided with a side opening, a conductor's stand in the extension or vestibule adjacent to the rear end and in line with the center of the said body, an inclined or sloping floor extending upward from the plane of the bottom of the side opening to the plane of the car floor and curving around the conductor's stand from a point rearward to a point to the left thereof, a suitably-supported railing above and extending around the stand at the rear and left side of the same, and a step in the extension at the rear end of the body between the conductor's stand and said side opening.

9. A car comprising a body having a substantially level floor and an end extension or vestibule provided with a side opening, an inclined or sloping floor extending upward from the plane of the bottom of the side opening to the plane of the car floor, and a door controlling access to the depressed end of the inclined or sloping floor through the side opening.

10. A car, comprising a body having a substantially level floor and an end extension or vestibule provided with a side opening, a conductor's stand in the end extension or vestibule, an inclined or sloping floor extending upward from the plane of the bottom of the side opening to the plane of the car floor, said inclined or sloping floor being bowed with the hollow side of the bow disposed forwardly and to the right, a door controlling access to the depressed end of the inclined floor through said side opening, and means whereby the conductor on his stand, may open and shut the said door.

11. A car, comprising a body having a substantially level floor and an end extension or vestibule provided with a side opening, a conductor's stand in the end extension or  
5 vestibule, an inclined or sloping floor extending upward from the plane of the bottom of the side opening to the plane of the car floor, said inclined or sloping floor being bowed with the hollow side of the bow disposed forwardly and to the right, a door controlling  
10 access to the depressed end of the inclined floor through said side opening, means whereby the conductor on his stand, may open and shut the said door, and means for  
15 locking the door in open or closed position.

12. A car, comprising a body having a substantially level floor and an end extension or vestibule provided with a side opening, a conductor's stand in the extension or vestibule  
20 adjacent to the rear end and in line with the center of the said body, an inclined or sloping floor extending upward from the plane of the bottom of the side opening to the plane of the car floor, and curving around  
25 the conductor's stand from a point rearward to a point to the left thereof, a door controlling access to the depressed end of the inclined floor through the side opening, and a

door controlling exit from the car through said side opening between the end of the  
30 body and the first-named door.

13. A car, comprising a body having a substantially level floor and an end extension or vestibule provided with a side opening, a conductor's stand in the extension or vestibule  
35 adjacent to the rear end and in line with the center of the said body, an inclined or sloping floor extending upward from the plane of the bottom of the side opening to the plane of the car floor, and curving  
40 around the conductor's stand from a point rearward to a point to the left thereof, a door controlling access to the depressed end of the inclined floor through the side opening, a door controlling exit from the car  
45 through said side opening between the end of the body and the first-named door, and independent means whereby the conductor on his stand, may open or close either of said  
50 doors.

In testimony whereof I affix my signature, in the presence of two witnesses.

CHARLES C. CREWSON.

Witnesses:

HELEN C. RODGERS,  
G. Y. THORPE.