C. A. REMELIUS.

GATE OR DOOR OPERATING MECHANISM FOR PASSENGER CARS.

APPLICATION FILED DEC. 9, 1909.

1,067,681. Patented July 15, 1913.

6 SHEETS—SHEET 1.

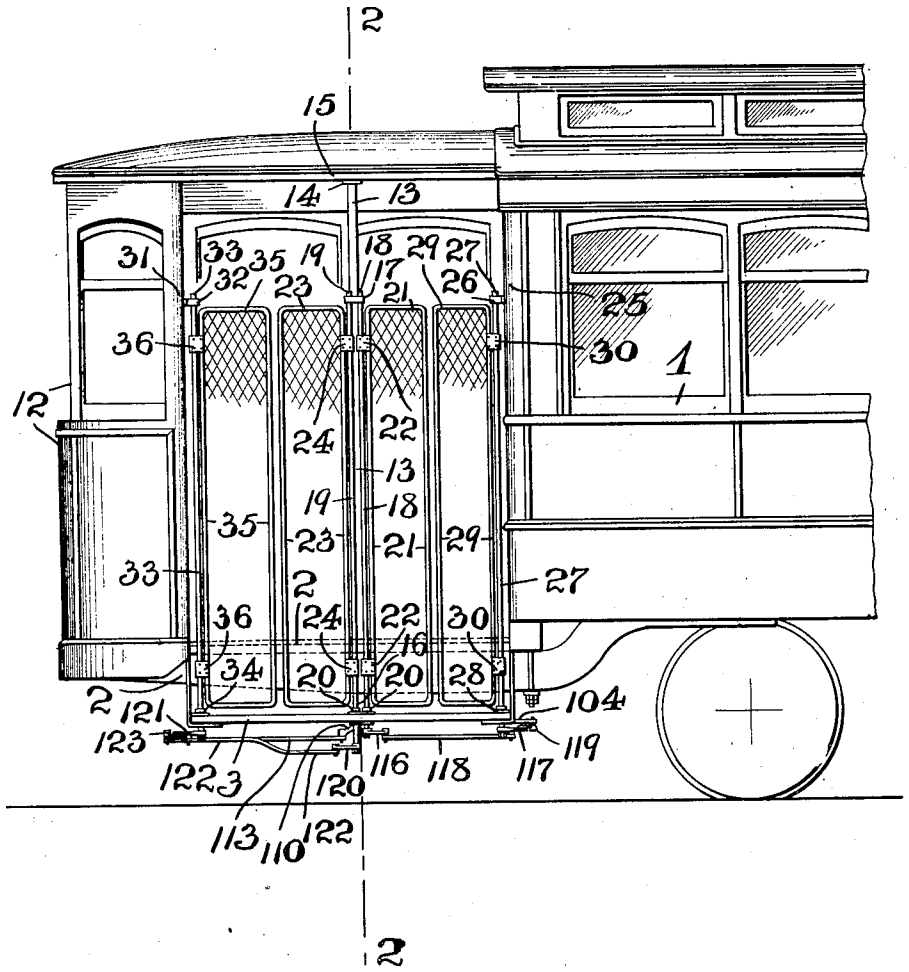


Fig. 1

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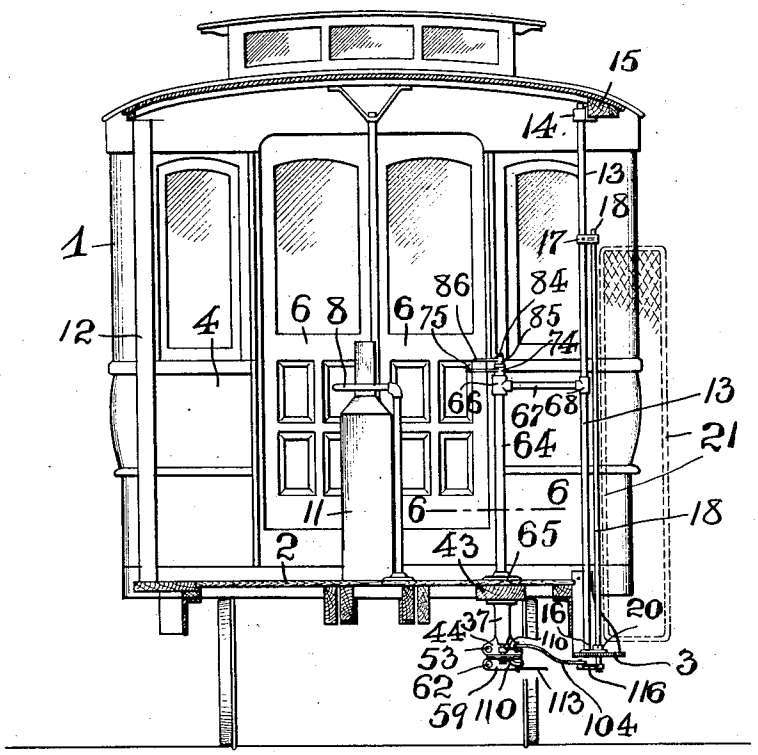


Fig. 2

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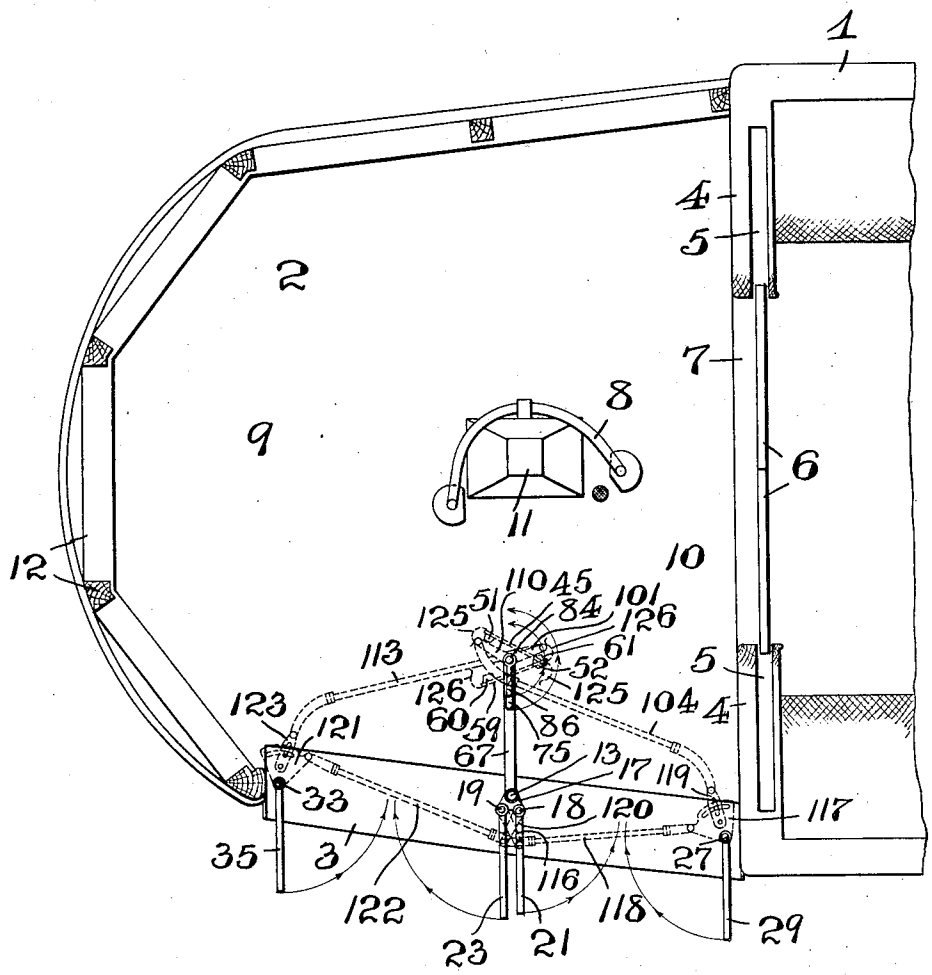


Fig. 3

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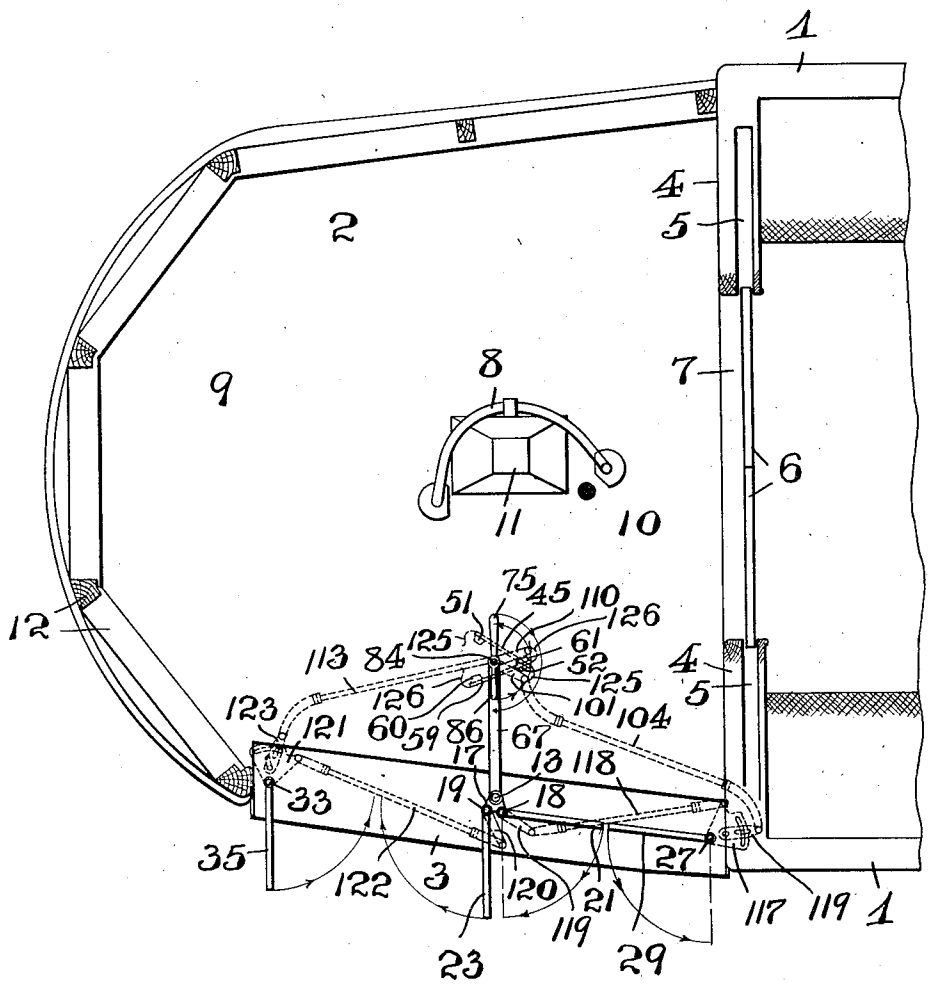


Fig. 4

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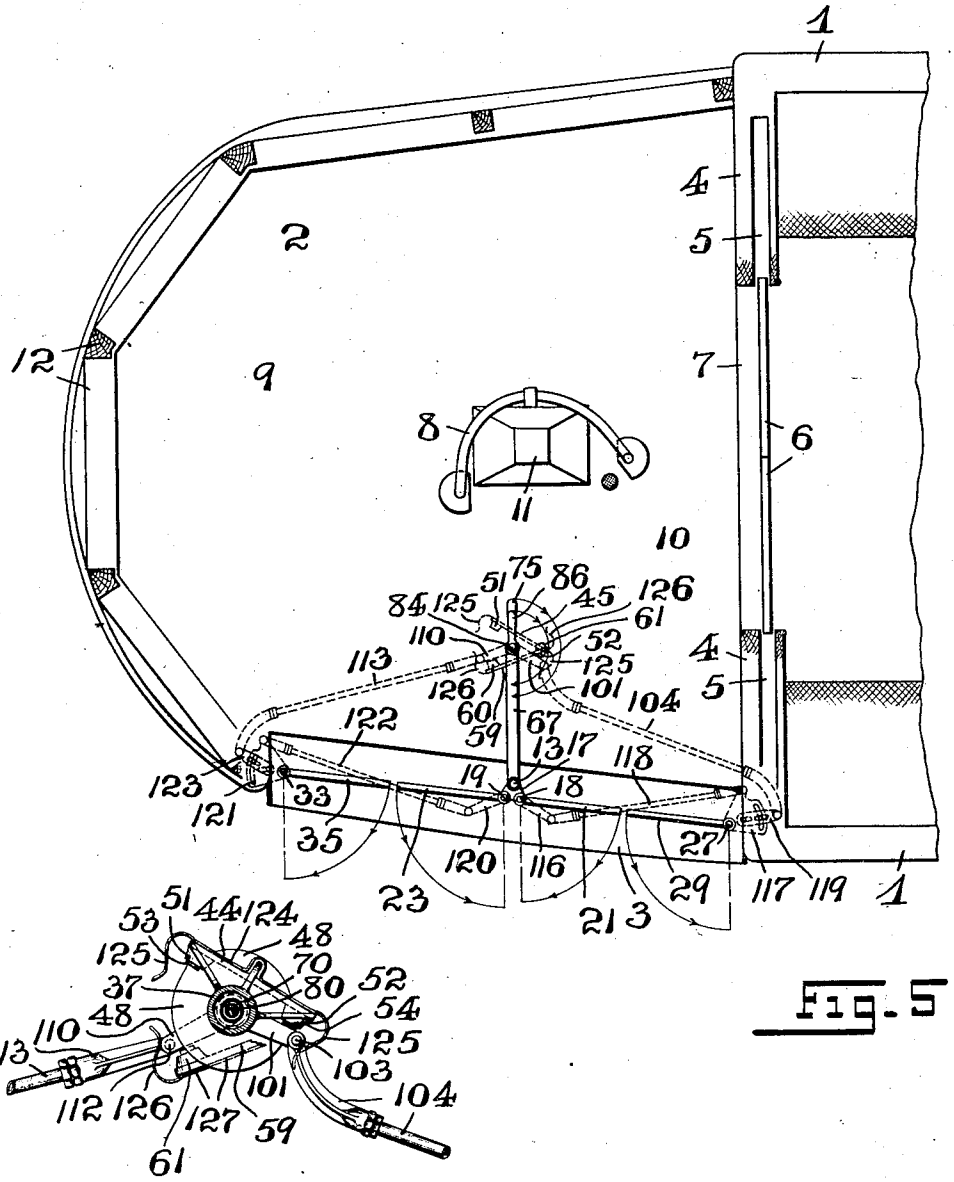


Fig. 5

Fig. 6

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6 SHEETS—SHEET 6.

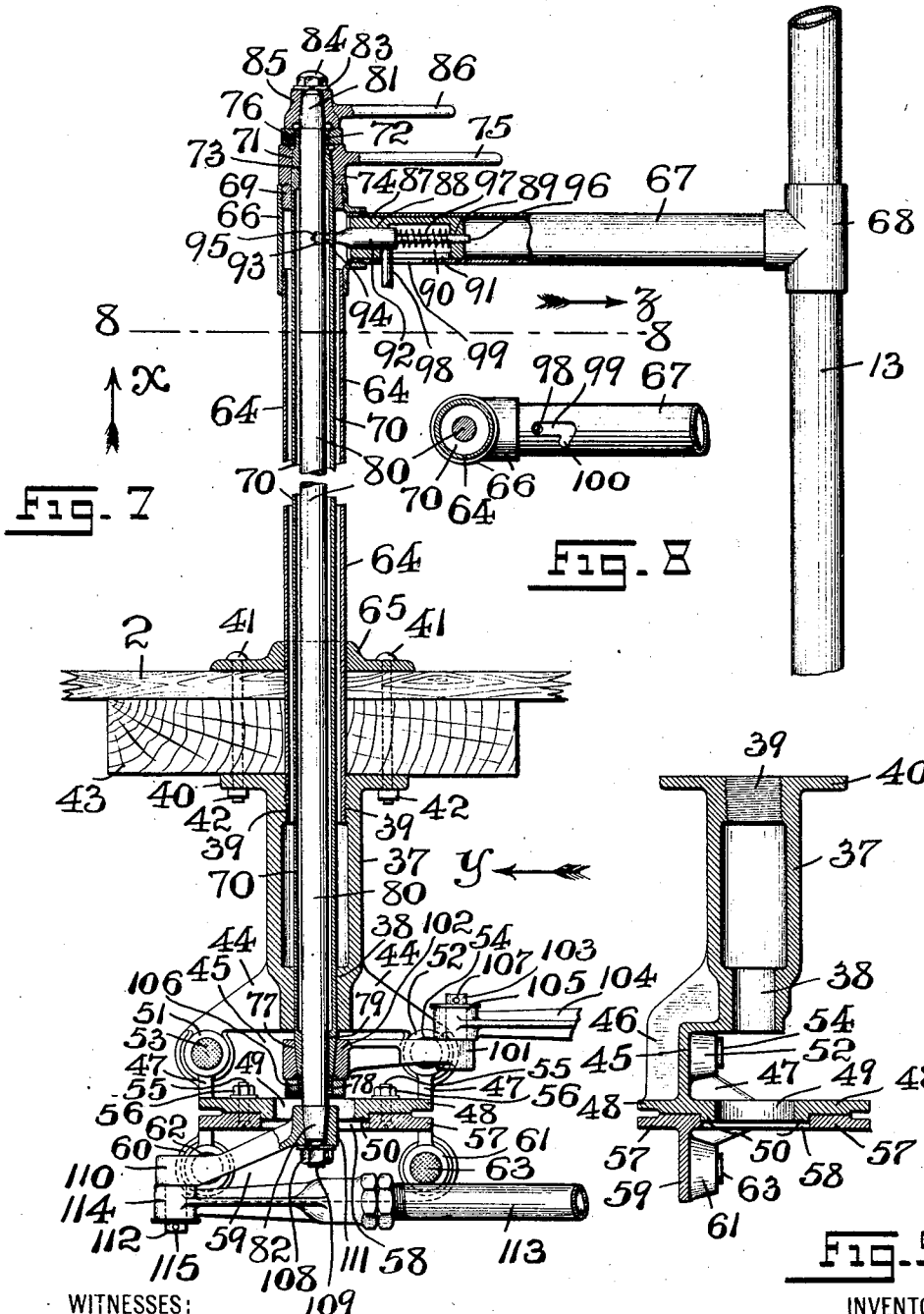


Fig. 7

Fig. 8

Fig. 9

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UNITED STATES PATENT OFFICE.

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GATE OR DOOR OPERATING MECHANISM FOR PASSENGER-CARS.

1,067,681. Specification of Letters Patent. Patented July 15, 1913.

Application filed December 9, 1909. Serial No. 532,247.

To all whom it may concern:

Be it known that I, CHARLES A. REMELIUS, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Gate or Door Operating Mechanisms for Passenger-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as 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 characters of reference marked thereon, which form a part of this specification.

This invention relates, generally, to railway cars; and, the invention has reference, more particularly, to that class of cars which are employed for the purposes of carrying passengers, and which cars are provided with a platform or platforms arranged with a dividing rail, or similar means, whereby the same platform may be provided and used with two independent and separate passageways, one for the entrance and the other for the exit of the passengers, as ordinarily used on what are termed as "pay as you enter cars."

The present invention has for its principal object to provide in connection with a platform of a railway car which has such independent and separate entrance and exit passage-ways, a door or gate, or doors or gates, for each passageway, and mechanism for opening and closing the same, said mechanism being under the control of the conductor, and being operated by the conductor only when the car has come to a standstill, so that a person can not jump on or off the car while it is in motion, and thereby overcoming the danger to limb and life on account of persons carelessly endeavoring to alight from or jump on a moving car.

This invention has for its further object to provide a novel and simply constructed, as well as an efficiently operating mechanism which is operated by and is under the perfect control of the conductor, for operating two sets of doors or gates, one for the entrance-part and the other for the exit-part of the platform, either singly, so that the doors or gates of the entrance-part may be opened and closed without opening and closing those of the exit-part, and vice versa, so that the doors or gates of the exit-part may be opened and closed without opening and closing those of the entrance-part; or collectively, so that the doors or gates of both entrance and exit-parts of the platform can be opened and closed simultaneously.

A further object of this invention is to provide in connection with the platform of a car, a door or gate, or sets of doors or gates, which are hinged at the step-side of the platform, so that the door or gate, or the sets of doors or gates, when operated so as to be brought into their opened relations, will swing outwardly, and will stand at right angles from the side of the car, or approximately so, whereby no means is presented to the person desirous of jumping upon the step of the platform before the car comes to a full stop; and, thereby providing a safe-guard against accident due to the foolhardiness or carelessness of the "jumping-on" or "jumping-off" passenger.

Other objects of this invention not at this time more particularly enumerated will be clearly understood from the following detailed description of my present invention.

The invention consists, primarily, in the novel gate or door-closing and opening means for the platforms of railway cars hereinafter set forth; and, the invention consists, furthermore, in the novel arrangements and combinations of devices and parts, as well as in the details of the construction of the same, all of which will be more fully described in the following specification, and then finally embodied in the clauses of the claims which are appended to and which form an essential part of this specification.

The invention is clearly illustrated in the accompanying drawings, in which:

Figure 1 is an elevation of one end of a railway car and its platform, showing in connection therewith, and in elevation, two sets of gates or doors closed, and mechanism for operating said gates or doors, all illustrating one embodiment of the present invention; and Fig. 2 is a transverse vertical section of the said parts, said section being

represented as taken on line 2—2 in said Fig. 1, looking toward the body of the car. Fig. 3 is a horizontal sectional representation of the frame-work of the car-portion represented in said Figs. 1 and 2, said view showing a top edge-view of the gates or doors 2 in their opened relation, and a plan view, in dotted outline, of the mechanism for operating said gates or doors. Fig. 4 is a similar view of the same parts represented in said Fig. 3, said view showing one set of gates or doors open and another set of gates or doors closed, with a plan view, in dotted outline, of the relative positions of the gate or door-operating mechanism, when the gates or doors are in the above-stated positions; and Fig. 5 is a similar view of the same devices and parts, showing their relative positions when all the doors or gates are closed. Fig. 6 is a detail horizontal sectional representation of portions of the gate or door-operating mechanism, said section being taken on line 6—6 in said Fig. 2, and made on an enlarged scale, and the platform of the car being omitted from this view, and said view showing the true operative positions of certain buffers used with the mechanism. Fig. 7 is an enlarged vertical section of certain portions of the gate or door-operating mechanism, the parts shown in the lower portion of said section, however, while being correctly shown mechanically, being distortively represented with relation to the buffers, which are correctly shown in the above stated Fig. 6. Fig. 8 is a horizontal detail section, said section being taken on line 8—8 in said Fig. 7, looking in the direction of the arrow *x*. Fig. 9 is a detail vertical section of a combined bearing member and buffers carried thereon, said section being taken as looking in the direction of the arrow *y* in Fig. 7.

Similar characters of reference are employed in all of the above described views, to indicate corresponding parts.

Referring now to the several figures of the drawings, the reference-character 1 indicates a portion of the body of any usual type of street railway car which is provided at one or both ends with the usual inclosed or vestibule-platform 2 and the usual side-step 3 leading therefrom. The reference-character 4 indicates the usual frame-work between the car body 1 and the platform 2, formed with the usual guides or ways 5, in which are movably arranged the usual doors 6, for opening or closing the entrance 7 from the platform into the body of the car. The platform is provided with any suitably constructed dividing rail, as 8, which divides the platform into an entrance-part 9 and an exit-part 10, and 11 indicates a fare-receiving box of any usual construction, such as ordinarily placed upon the platforms of "pay-as-you-enter" cars.

The position of the conductor upon the platform of the car is at one side of this fare-receiver and in close proximity to the levers of the gate or door-operating mechanism, so that he can readily take hold of and operate the levers of the mechanism to be presently more fully described.

The large side-opening at the side of the platform 2, and which is formed by said platform and the frame-work 12 constituting the vestibule of the platform, is divided by a vertical rod or standard 13, which is suitably secured at its upper end, as at 14, to the roof-member 15, and at its lower end, as at 16, to the step 3, substantially in the manner illustrated in Fig. 2 of the drawings. A bracket-like plate 17 is suitably secured upon said rod or standard 13, said plate being formed with suitable bearing-portions in which are rotatably mounted the upper end-portions of a pair of vertical rods 18 and 19, said rods 18 and 19 having their lower end-portions rotatably mounted in suitable bearings, as 20, secured upon the side-step 3, and said end-portions of the rods 18 and 19 extending through the said step and projecting beneath said step, substantially as shown. The projecting end-portion of one of the said rods, as 19, is preferably left longer than the projecting end-portion of the other rod, as 18.

A suitably formed gate or door, as 21, is rigidly affixed to said rod 18, so that it will turn with the latter, by means of attaching plates 22, or other suitable fastening means; and, in a similar manner, a similarly formed gate or door, as 23, is rigidly affixed to said rod 19, so that it will turn with said rod, by means of attaching plates 24, or other suitable fastening means.

Suitably secured to the edge-portion 25 of the car-body is a bracket-like plate 26 formed with a bearing-portion in which is rotatably mounted the upper end-portion of a rod 27, said rod having its lower end-portion rotatably mounted in a suitable bearing 28 which is secured upon the side-step 3, said rod having its lower end-portion extending through and projecting beneath the said step. A suitably formed gate or door, as 29, is rigidly affixed to said rod 27, so as to turn with the same, by means of attaching plates 30, or other suitable fastening means. In a like manner, there is suitably secured to the edge-portion 31 of the vestibule-frame, a bracket-like plate 32 which is also formed with a bearing-portion in which is rotatably mounted the upper end-portion of a rod 33, said rod having its lower end-portion rotatably disposed in a bearing 34, also secured upon said side-step 3, and said rod having its lower end-portion extending through and projecting beneath the said step. A suitably formed gate or door, as 35, is rigidly affixed to said rod 33, so as to turn

therewith, by means of attaching plates 36, or other suitable fastening means.

The gate or door-operating mechanism, by means of which the several gates or doors are swung in the directions of the arrow-headed arcs, shown in Figs. 3, 4 and 5 of the drawings, comprises a suitably formed bracket which consists, essentially, of a hollow or tubular element or member 37 which is formed with a lower smooth bore 38, providing a bearing, and an upper and internally screw-threaded part 39, said element or member 37 being also provided with a perforated flange, as 40, for securing the same by means of bolts 41 and nuts 42 upon the under side of the platform, and preferably to a supporting beam 43 of said platform, substantially as shown in Fig. 7 of the drawings. As represented in Figs. 7 and 9, the said element or member 37 is formed upon one side, at its lower end-portion, with laterally extending wings 44, from which projects in a downward direction, a web or plate 45, said parts being suitably strengthened preferably by means of ribs 46 and 47. Connected with the said web or plate 45 and with said ribs 46 and 47 is a buffer-supporting or carrying-plate or member 48, formed with an opening 49 and an annular rib-like portion 50. The said web or plate 45 is also provided with a pair of socket-like holding members 51 and 52, in which are respectively secured suitable resilient buffers 53 and 54 of rubber or other analogous material. Suitably and adjustably secured against the lower face of said buffer-supporting or carrying-plate or member 48, by means of bolts 55 and nuts 56, or other suitable fastening means, is another buffer-supporting or carrying plate or member 57, which is provided with a central opening 58 with the surrounding marginal edge-portion of which the rib-like portion or flange 50 of the buffer-supporting or carrying-plate or member 48 registers, substantially as shown in said Figs. 7 and 9 of the drawings. The said plate or member 57 is also provided at one side thereof, with a web or plate 59, from which project a pair of socket-like holding members 60 and 61, in which are respectively secured suitable resilient buffers 62 and 63 of rubber or other analogous material.

From an inspection of Figs. 7 and 9, in which the said buffer-supporting or carrying-plates or members 48 and 57 are shown mechanically correct, but not in their true connected relations when assembled in their operative positions beneath the platform of the car, in the manner indicated in Figs. 3 to 6 inclusive of the drawings, it will be evident, that the said buffer-supporting or carrying-plates or members are rotatably adjustable with relation to each other, so that they can be brought into their true positions represented in said Figs. 3 to 6 inclusive and then permanently fixed in their true positions by means of the previously mentioned bolts 55 and nuts 56, as will be clearly understood.

Suitably screwed into the previously mentioned internally screw-threaded portion 39 of the hollow or tubular element or member 37 and extending in an upward direction through the beam 43 and the platform 2 is a hollow member or pipe 64, said member or pipe 64 forming a suitable standard extending also through a suitably formed floor-plate, as 65, which is screwed in place upon the platform 2 by means of the previously mentioned bolts 41. Mounted upon the upper and screw-threaded end-portion of said member or pipe 64 is a T-fitting 66, and 67 indicates a laterally extending brace, in the form of a pipe which is attached at one end to said T-fitting 66 and at its other end to a second T-fitting 68 arranged in the vertical post 13, and forms with the standard 64, a dividing rail for the platform, so as to separate the entrance-portion from the exit-portion. Suitably secured in the upper screw-threaded portion of said T-fitting 66 is a bearing-plug 69, in which is rotatably mounted the upper end-portion of a tubular member or pipe 70, said member or pipe 70 extending downwardly through said T-fitting 66, the fixed hollow member or pipe 64, and the hollow or tubular element or member 37, the lower end-portion of said member or pipe 70 being rotatably mounted in the cylindrical bore or bearing-portion 38 of said element or member 37. The said tubular member 70 has its upper end-portion projecting above the said bearing-plug 69, said end-portion being preferably tapered, as at 71, and screw-threaded, as at 72, and said end-portion being also made to provide a bearing-portion 73. Affixed to said tapered portion 71 is a socket-member 74 from which extends a handle or lever 75, for turning said member and thereby producing a rotary motion of said hollow member or pipe 70, a nut or washer 76 being suitably secured upon the screw-threaded part 72 for suitable securing the member or pipe 70 in its operatively supported position. The lower end-portion of the said tubular member or pipe 70 which projects below the bearing-portion 38 of the member or element 37 is also made tapering, as at 77, and screw-threaded, as at 78, and said end-portion being also made to provide a bearing-portion 79. Rotatably arranged in the bearing-portions 73 and 79 of said tubular member or pipe 70 is a rod 80, said rod having its upper end-portion 81 projecting above the nut or washer 76 and having its lower end-portion 82 projecting below the screw-threaded por-

tion 78 of the member or pipe 70. Affixed to said end portion 81 of the rod 80, and held thereon by means of a washer 83 and a stud-screw or bolt 84 is a socket-member 85 from which extends a handle or lever 86, for turning said socket-member 85 and at the same time turning the said rod 80 which is connected therewith. In order to lock the said tubular member or pipe 70 and the rod 80 against turning which is sometimes desirable, there is suitably arranged and secured within the tubular brace or pipe 67, at the end where it is connected with the T-fitting 66, a plug-like member 87, which is formed with bearing-portions 88 and 89, and a chamber 90 and slot 91. Slidably arranged in the said bearing-portion 88 is a bolt 92, said bolt having an end-portion 93 extending through a hole or opening 94 in the tubular member 70, and projecting also into a receiving socket 95, as clearly shown in Fig. 7 of the drawings. Projecting from the opposite end of said bolt 92 is a rod 96 which extends through the chamber 90 and has a portion slidably arranged in the bearing-portion 89, a spring 97 encircling that portion of the rod 96 within the chamber 90, and the tendency of the said spring being to force the end-portion 93 of the bolt 92 through the hole or opening 94 and into the socket 95, so that the members 70 and 80 are prevented from turning. To remove said end-portion 93 from its holding or locking engagement with said parts of the members 70 and 80, the bolt 92 is provided with a downwardly projecting post 98 which is slidably arranged in the slot 91 of the member 87 and extends through a slot 99 in the brace or pipe 67, being also slidably arranged in said slot 99, and the projecting end-portion of said post 98 serving as a fingerpiece to move the bolt in the direction of the arrow *z* in said Fig. 6, until the post 98 is forced laterally into a recessed receiving portion 100 at the end of the slot 99, to retain the end-portion 93 of the bolt 92 in its withdrawn position from said members 70 and 80, and whereby the latter are free to be actuated by means of the levers 75 and 86, as and for the purposes to be presently more fully described.

Suitably affixed upon the tapered portion 77 of the tubular member or pipe 70 is the hub 102 of a crank-arm 101, said arm being provided upon its free end-portion with an upwardly projecting stud or pivot-post 103, upon which is adapted to oscillate the hub 105 of a connecting rod 104. Suitably secured upon the portion of the rod 80 which extends below the said tapered part 77 is a supporting ring 106, the purpose of which will be understood from an inspection of said Fig. 7. The hub 105 of said connecting rod 104 may be maintained in its operative position upon said stud or pivot-post 103 by means of a pin 107, or any other suitable fastening means. Suitably affixed upon the tapered part 82 of the rod 80, and held thereon by means of a nut 108 which is screwed upon the portion 109 of said rod 80, is the hub 111 of a crank-arm 110, said arm 110 being provided upon its free end-portion with a stud or pivot-post 112, upon which is adapted to oscillate the hub 114 of a connecting rod 113. The hub 114 of said connecting rod 113 may be maintained in its operative position upon said stud or pivot-post 112 by means of a pin 115, or any other suitable fastening means.

Secured to the lower end-portion of the previously mentioned rod 18, beneath the step 3, is a crank-arm 116, and secured upon the lower end-portion of the rod 27, also beneath the step 3, is a sector-plate 117, said crank-arm 116 being pivotally and adjustably connected with said sector-plate 117 by means of a connecting rod 118. Adjustably connected with the said sector-plate 117 is an arm or link 119, and pivotally connected with this arm or link is the said connecting rod 104. Similarly secured to the rod 19, upon the lower end-portion thereof beneath the step 3, is a crank-arm 120, and secured upon the lower end-portion of the rod 33, also beneath the step 3, is a sector-plate 121, said crank-arm 120 being pivotally and adjustably connected with the said sector-plate 121 by means of a connecting rod 122. Adjustably connected with the said sector-plate 121 is an arm or link 123 and pivotally connected with this arm or link 123 is the said connecting rod 113.

The method of operating the respective gates or doors 21 and 29, and 23 and 35 in pairs, either singly or collectively, so as to open either the entrance-portion or the exit-portion of the car-platform, or both simultaneously as may be desired, briefly is as follows: In Fig. 5 is shown the closed positions of each pair of gates or doors. Now, suppose the pair of gates 23 and 35, that is those movable in front of the entrance-portion of the platform, are to be opened. The conductor turns the lever 86 from its position shown in Fig. 5 of the drawings, to the position indicated in Fig. 4. The rod 80 is thereby rotated, and in consequence moves the crank-arm 110, between the buffers 62 and 63, and by means of the connecting rod 113 and link 123 causes a rotative movement of the sector-plate 121. At the same time, the sector-plate 121 produces movements of the connecting rod 122 and the crank-arm 120 from their positions in said Fig. 5 to the positions in Fig. 4; and, the sector-plate 121 being fast upon the rod 33, and the arm 120 being fast upon the rod 19, the gates 35 and 23 will move outwardly, in the directions of the arrows in said Fig. 5, into the opened positions, shown in Fig. 4, without

having in the least affected the positions of the other pair of gates or doors 21 and 29. By returning the lever 86 to its former position, the gates or doors 35 and 23 are again closed, as will be clearly understood. Now, when it is desired to open the gates or doors 21 and 29 in front of the exit-portion of the platform, the conductor turns the lever 75, so as to produce a rotary movement of the tubular member or pipe 70 and thereby moves the crank-arm 121 secured thereto between the buffers 53 and 54, as will be evident, and by means of the connecting rod 104 and the link 119 produces a proper rotative movement of the sector-plate 117. At the same time, the sector-plate 117 moves the connecting rod 118 and the crank-arm 116, and said crank-arm 116 being secured upon the rod 18 and the sector-plate upon the rod 27, the result will be that the said gates or doors 21 and 29 are readily moved into their outwardly opened positions, and are returned again into their closed positions by turning the lever 75 back into its normal initial position, as will be clearly evident.

When it is desired to operate both sets of gates or doors in front of both the entrance-portion and the exit-portion of the platform, the conductor grasps both levers 75 and 86, the levers being located closely together one above the other, in one hand, and by turning said levers together, the door-operating mechanism may be simultaneously operated for swinging all gates or doors, simultaneously into their outwardly opened relations, indicated in Fig. 3 of the drawings, and back again into their closed positions shown in said Fig. 5, as will be clearly evident. If desired, the said web or plate 45 may have suitably secured thereto a plate or bar 124 formed at its ends with spring-tongues or ears, as 125, see Fig. 6, with either of which the free end-portion of the crank-arm 101, during its movements, can be brought into separable and frictional holding engagement, to retain the operated parts in their fixed positions, at the end of each movement, against accidental displacement or movement due to jarring and vibration to which the car is subjected. In a similar manner, the web or plate 59 may also be provided with a plate or bar 126 also formed at its ends with spring-tongues or ears, as 127, with either of which the free end-portion of the crank-arm 110, during its movements, can be brought into separable and frictional holding engagement, for the same purposes hereinabove described.

I am aware that changes may be made in the general arrangements and combinations of the several devices and parts, as well as in the details of the construction of the said parts, without departing from the scope of the present invention as set forth in the foregoing specification, and as defined in the claims which are appended to the said specification. Hence, I do not limit myself to the exact arrangements and combinations of the said devices and parts, as described in the said specification, nor do I confine myself to the exact details of the construction of the said parts as illustrated in the accompanying drawings.

I claim:—

1. A car having a body and an end platform, said platform having an entrance and an exit doorway in the side thereof, gates respectively controlling said doorways, and means located on the platform and intermediate the platform side doorways and the car body to divide the platform into separate entrance and exit passages across the platform, for independently operating said gates.

2. A car provided with a platform, said platform having an entrance and exit-portion at one side thereof, a dividing rail upon said platform for separating the entrance-portion from said exit-portion, and a plurality of gates for opening and closing said entrance and exit-portions, and concentrically disposed operating members arranged to extend to a point beneath the platform and connected with said gates, said members having a portion extending above the platform and located adjacent the dividing rail so as to be under the control of the conductor for operating said gates.

3. A car provided with a platform, said platform having an entrance and an exit-portion at one side thereof, a hollow standard upon said platform, a dividing rail extending from said standard for separating the entrance-portion of the platform from the exit-portion thereof, a plurality of gates for opening and closing said entrance and exit-portions, a gate-operating mechanism, concentrically disposed operating members extending through said hollow standard, said members being connected at one end with said gate operating mechanism, the opposite ends of said members projecting above said hollow standard, and means upon said projecting ends under the control of the conductor for actuating said gate-operating mechanism.

4. A car provided with a platform, said platform having an entrance and an exit-portion at one side thereof, a hollow standard upon said platform, a dividing rail extending from said standard for separating the entrance-portion of the platform from the exit-portion thereof, a plurality of gates for opening and closing said entrance and exit portions, a gate-operating mechanism, means extending through said hollow standard, said means being connected at one end with said gate-operating mechanism, the opposite end of said means projecting above

said hollow standard, means upon said projecting end under the control of the conductor for actuating said gate-operating mechanism, and a locking device connected with said rail and standard for detachable holding or locking engagement with said means for controlling and actuating the gate-operating mechanism.

5. A car provided with a platform, said platform having an entrance and an exit-portion at one side thereof, a holow standard upon said platform, a dividing rail extending from said standard for separating the entrance-portion of the platform from the exit-portion thereof, a plurality of gates for opening and closing said entrance and exit-portions, a gate-operating mechanism, means extending through said hollow standard, said means being connected at one end with said gate-operating mechanism, the opposite end of said means projecting above said hollow standard, means upon said projecting end under the control of the conductor for actuating said gate-operating mechanism, and a spring-controlled locking bolt slidably connected with said rail and standard for detachable holding or locking engagement with the means for controlling and actuating the gate-operating mechanism.

6. A car having a body and an end platform, said platform having an entrance and an exit doorway in the side thereof, gates respectively controlling said doorways, means located on the platform and intermediate the platform side doorways and the car body, to divide the platform into separate entrance and exit passages across the platform, and means located adjacent said passage separating means for independently operating said gates.

7. A car provided with a platform, said platform having an entrance and an exit-portion at one side thereof, a hollow standard upon said platform, a dividing rail extending from said standard for separating the entrance-portion of the platform from the exit-portion thereof, a plurality of gates for opening and closing said entrance and exit-portions, a gate-operating mechanism, bearing-portions within said tubular standard, a vertical rod rotatably mounted in said bearing-portions, said rod being connected at its lower end to said gate-operating mechanism and having its upper end projecting above said standard, a lever upon said projecting end of the rod for actuating said gate-operating mechanism, and a locking device connected with said rail and standard for detachable holding or locking engagement with said rod.

8. A car provided with a platform, said platform having an entrance and an exit-portion at one side thereof, a hollow standard upon said platform, a dividing rail extending from said standard for separating the entrance-portion of the platform from the exit-portion thereof, a plurality of gates for opening and closing said entrance and exit-portion, a gate-operating mechanism, bearing-portions within said tubular standard, a vertical rod rotatably mounted in said bearing-portions, said rod being connected at its lower end to said gate-operating mechanism and having its upper end projecting above said standard, a lever upon said projecting end of the rod for actuating said gate-operating mechanism, and a spring-controlled locking bolt slidably connected with said rail and standard for detachable holding or locking engagement with said rod.

9. A car provided with a platform, said platform having an entrance and an exit-portion, different sets of gates for said entrance and exit-portions, concentrically disposed operating members and mechanism between said members and said gates and constructed so that said gates may be operated either singly or collectively.

10. A car provided with a platform, said platform having an entrance and an exit-portion at one side thereof, a dividing rail upon said platform for separating the entrance-portion from said exit-portion, and a set of outwardly swinging gates for opening and closing said entrance and exit-portions, and concentrically disposed operating members arranged to extend to a point beneath the platform of the car and connected with said gates, said members being arranged adjacent said dividing rail so as to be under the control of the conductor and being constructed so that said gates may be operated either singly or collectively.

11. A car provided with a platform, said platform having an entrance and an exit-portion at one side thereof, a hollow standard upon said platform, a dividing rail extending from said standard for separating the entrance-portion of the platform from the exit-portion thereof, a set of gates connected with each entrance and exit-portion, a gate-operating-mechanism, concentrically disposed operating members, means extending through said hollow standard, said members being connected at one end with said gate-operating mechanism, the opposite ends of said members projecting above said hollow standard, and means upon said projecting ends under control of the conductor for actuating said gate-operating mechanism, said gate-operating mechanism and the actuating and controlling means therefor being constructed so that said gates may be operated either singly or collectively.

12. A car provided with a platform, said platform having an entrance and an exit-portion at one side thereof, a hollow standard upon said platform, a dividing rail ex-

tending from said standard for separating the entrance-portion of the platform from the exit-portion thereof, a set of gates connected with each entrance and exit-portion, a gate-operating mechanism, means extending through said hollow standard, said means being connected at one end with said gate-operating mechanism, the opposite end of said means projecting above said hollow standard, means upon said projecting end under control of the conductor for actuating said gate-operating mechanism, said gate-operating mechanism and the actuating and controlling means therefor being constructed so that said gates may be operated either singly or collectively, and a locking device connected with said rail and standard for detachable holding or locking engagement with said means for controlling and actuating the gate-operating mechanism.

13. A car provided with a platform, said platform having an entrance and an exit-portion at one side thereof, a hollow standard upon said platform, a dividing rail extending from said standard for separating the entrance-portion of the platform from the exit-portion thereof, a set of gates connected with each entrance and exit-portion, a gate-operating mechanism, bearing-portions within said tubular standard, a tubular element rotatably mounted in said bearing-portions, said tubular element being also provided with bearing-portions, a vertical rod rotatably mounted in the bearing-portions of said tubular element, said tubular element and said rod having their lower end-portions connected with said gate-operating mechanism, said tubular element having its upper end-portion extending above said tubular standard, a lever upon said end-portion for rotating said tubular element, said vertical rod having its upper end-portion extending above the upper end-portion of said tubular element, and a lever upon the said projecting end-portion of said rod for rotating said rod, all arranged and constructed so that said gates may be operated either singly or collectively.

14. A car provided with a platform, said platform having an entrance and an exit-portion at one side thereof, a hollow standard upon said platform, a dividing rail extending from said standard for separating the entrance-portion of the platform from the exit-portion thereof, a set of gates connected with each entrance and exit-portion, a gate-operating mechanism, bearing-portions within said tubular standard, a tubular element rotatably mounted in said bearing-portions, said tubular element being also provided with bearing-portions, a vertical rod rotatably mounted in the bearing-portions of said tubular element, said tubular element and said rod having their lower end-portions connected with said gate-operating mechanism, said tubular element having its upper end-portion extending above said tubular standard, a lever upon said end-portion for rotating said tubular element, said vertical rod having its upper end-portion extending above the upper end-portion of said tubular element, a lever upon the said projecting end-portion of said rod for rotating said rod, all arranged and constructed so that said gates may be operated either singly or collectively, and a locking device connected with said rail and standard for detachable holding engagement with said tubular element and with said rod.

15. A car provided with a platform, said platform having an entrance and exit-portion, gates located in close proximity to said portions, concentrically disposed operating members and means between said members and said gates for operating said gates, combined with a tubular element extending from the bottom of the platform, a buffer-carrying plate connected with said tubular element, a second buffer-carrying plate secured to said first-mentioned buffer-carrying plate, and buffers extending from said plates with which portions of the gate-operating mechanism are brought in engagement.

16. A car provided with a platform, said platform having an entrance and an exit-portion at one side thereof, a hollow standard upon said platform, a dividing rail extending from said standard for separating the entrance-portion of the platform from the exit-portion thereof, a plurality of gates for opening and closing said entrance and exit-portions, a gate-operating mechanism, means extending through said hollow standard, said means being connected at one end with said gate operating mechanism, the opposite end of said means projecting above said hollow standard, and means upon said projecting end under the control of the conductor for actuating said gate-operating mechanism, combined with a tubular element extending from the bottom of the platform, a buffer-carrying plate connected with said tubular element, a second buffer-carrying plate secured to said first-mentioned buffer-carrying plate, and buffers extending from said plates with which portions of the gate-operating mechanism are brought in engagement.

17. A car provided with a platform, said platform having an entrance and an exit-portion at one side thereof, a hollow standard upon said platform, a dividing rail extending from said standard for separating the entrance-portion of the platform from the exit-portion thereof, a plurality of gates for opening and closing said entrance and exit-portions, a gate-operating mechanism, bearing-portions within said tubular stand-

ard, a vertical rod rotatably mounted in said bearing-portions, said rod being connected at its lower end to said gate-operating mechanism and having its upper end projecting above said standard, and a lever upon said projecting end of the rod for actuating said gate-operating mechanism, combined with a tubular element extending from the bottom of the platform, a buffer-carrying plate connected with said tubular element, a second buffer-carrying plate secured to said first-mentioned buffer-carrying plate, and buffers extending from said plates with which portions of the gate-operating mechanism are brought in engagement.

18. A car provided with a platform, said platform having an entrance and an exit-portion at one side thereof, a dividing rail upon said platform for separating the entrance-portion from said exit-portion, and a set of outwardly swinging gates for opening and closing said entrance and exit-portions, and mechanism arranged beneath the platform of the car and connected with said gates, said mechanism being under the control of the conductor and being constructed so that said gates may be operated either singly or collectively, combined with a tubular element extending from the bottom of the platform, a buffer-carrying plate connected with said tubular element, a second buffer-carrying plate secured to said first-mentioned buffer-carrying plate, and buffers extending from said plates with which portions of the gate-operating mechanism are brought in engagement.

19. A car provided with a platform, said platform having an entrance and an exit-portion at one side thereof, a hollow standard upon said platform, a dividing rail extending from said standard for separating the entrance-portion of the platform from the exit-portion thereof, a set of gates connected with each entrance and exit-portion, a gate-operating mechanism, means extending through said hollow standard, said means being connected at one end with said gate-operating mechanism, the opposite end of said means projecting above said hollow standard, and means upon said projecting end under control of the conductor for actuating said gate-operating mechanism, said gate-operating mechanism and the actuating and controlling means therefor being constructed so that said gates may be operated either singly or collectively, combined with a tubular element extending from the bottom of the platform, said tubular element being formed with a screw-threaded part into which the lower portion of said standard is screwed, a buffer-carrying plate connected with said tubular element, a second buffer-carrying plate secured to said first-mentioned buffer-carrying plate, and buffers extending from said plates with which portions of the gate-operating mechanism are brought in engagement.

20. A car provided with a platform, said platform having an entrance and an exit-portion at one side thereof, a hollow standard upon said platform, a dividing rail extending from said standard for separating the entrance-portion of the platform from the exit-portion thereof, a set of gates connected with each entrance and exit-portion, a gate-operating mechanism, bearing-portions within said tubular standard, a tubular element rotatably mounted in said bearing-portions, said tubular element being also provided with bearing-portions, a vertical rod rotatably mounted in the bearing-portions of said tubular element, said tubular element and said rod having their lower end-portions connected with said gate-operating mechanism, said tubular element having its upper end-portion extending above said tubular standard, a lever upon said end-portion for rotating said tubular element, said vertical rod having its upper end-portion extending above the upper end-portion of said tubular element, and a lever upon the said projecting end-portion of said rod for rotating said rod, all arranged and constructed so that said gates may be operated either singly or collectively, combined with a tubular element extending from the bottom of the platform, said tubular element being formed with a screw-threaded part into which the lower portion of said standard is screwed, a buffer-carrying plate connected with said tubular element, a second buffer-carrying plate secured to said first-mentioned buffer-carrying plate, and buffers extending from said plates with which portions of the gate-operating mechanism are brought in engagement.

21. A car provided with a platform, said platform having a side-step and being provided with an entrance and an exit-portion, a dividing rod extending vertically from said step, a bracket-like bearing-plate connected with said dividing rod, a pair of gate-carrying rods 18 and 19 rotatably mounted in said bearing-plate and extending through bearing-portions in said step, bracket-like bearing-plates connected respectively with a portion of the car-body and the vestibule-frame, a second pair of gate-carrying rods 27 and 33 rotatably mounted in said last-mentioned bearing-portions and extending through bearing-portions in said step, a hollow standard upon said platform, a dividing rail between said standard and said vertical dividing rod, bearing-portions within said tubular standard, a tubular element rotatably mounted in said bearing-portions, said tubular element being also provided with bearing-portions, a vertical rod rotatably mounted in the bearing-portions of said

tubular element, said tubular element having its upper end-portion extending above said standard, a lever upon said end-portion for rotating said tubular element, said vertical rod having its upper end-portion extending above the upper end-portion of said tubular element, a lever upon said projecting end-portion of said rod for rotating said rod, a crank-arm upon the lower end-portion of said tubular element, a crank-arm upon the lower end-portion of said vertical rod, a sector-plate affixed to the lower end-portion of each gate-carrying rod 27 and 33, and a connecting rod between each crank-arm and each sector-plate, a crank-arm upon the lower end-portion of each gate-carrying rod 18 and 19, and a connecting rod between each of said last-mentioned crank-arms and said sector-plates, all arranged and constructed so that the gates may be operated singly or collectively.

22. A car provided with a platform, said platform having a side-step and being provided with an entrance and an exit-portion, a dividing rod extending vertically from said step, a bracket-like bearing-plate connected with said dividing rod, a pair of gate-carrying rods 18 and 19 rotatably mounted in said bearing-plate and extending through bearing-portions in said step, bracket-like bearing-plates connected respectively with a portion of the car-body and the vestibule-frame, a second pair of gate-carrying rods 27 and 33 rotatably mounted in said last-mentioned bearing-portions and extending through bearing-portions in said step, a hollow standard upon said platform, a dividing rail between said standard and said vertical dividing rod, bearing-portions within said tubular standard, a tubular element rotatably mounted in said bearing-portions, said tubular element being also provided with bearing-portions, a vertical rod rotatably mounted in the bearing-portions of said tubular element, said tubular element having its upper end-portion extending above said standard, a lever upon said end-portion for rotating said tubular element, said vertical rod having its upper end-portion extending above the upper end-portion of said tubular element, a lever upon said projecting end-portion of said rod for rotating said rod, a crank-arm upon the lower end-portion of said tubular element, a crank-arm upon the lower end-portion of said vertical rod, a sector-plate affixed to the lower end-portion of each gate-carrying rod 27 and 33, and a connecting rod between each crank-arm and each sector-plate, a crank-arm upon the lower end-portion of each gate-carrying rod 18 and 19, a connecting rod between each of said last-mentioned crank-arms and said sector-plates, all arranged and constructed so that the gates may be operated singly or collectively, and a locking device connected with said rail and standard for detachable holding engagement with said tubular element and with said rod.

23. A car having a body and an end platform, said platform having a side doorway, a vertical standard arranged at the edge of said platform side doorway to divide the same into entrance and exit openings, gates respectively arranged on opposite sides of said standard for controlling said entrance and exit openings, and means for independently operating said gates, said means located on the platform and in position to divide the platform into separate passages corresponding to the separate entrance and exit side doorways.

24. A car having a body and an end platform, said platform having a side doorway, a vertical standard arranged at the edge of said platform side doorway to divide the same into separate entrance and exit openings, a pair of gates respectively arranged on opposite sides of said standard for controlling said openings, and means for independently operating each pair of gates, said means located on the platform in position to divide the platform into separate passages corresponding to said separate entrance and exit openings.

25. A car having a body and an end platform, said platform having a side doorway, a vertical standard arranged at the edge of said doorway to divide the same into separate entrance and exit openings, a pair of gates respectively arranged on opposite sides of said standard for controlling said openings, the members of each pair of gates moving in opposite directions to each other in the opening and closing movements thereof, and means for independently operating said pairs of gates, said means located on the platform in position to divide the platform into separate passages corresponding to said separate entrance and exit openings.

26. A car having a body and an end platform, said platform having a side doorway, a vertical standard arranged at the edge of said doorway to divide the same into separate entrance and exit openings, gates respectively arranged on opposite sides of said standard for controlling said openings, said gates extending below the level of the platform floor, and means for independently operating said gates, said means located on the platform in position to divide the platform into separate passages corresponding to the separate entrance and exit openings.

27. A car having a body and an end platform, said platform having a side doorway, a vertical standard arranged at the edge of said doorway to divide the same into separate entrance and exit openings, gates for

controlling said openings, a railing extending in a direction across the platform to divide the same into separate passages corresponding to the separate entrance and exit platform side openings, and means associated with said railing for operating said gates independently of each other.

28. A car, having a body and an end platform, said platform having a side doorway, a vertical standard arranged at the edge of the doorway to divide the same into separate entrance and exit openings, a gate for each opening, a standard located on the platform in position to divide the same into separate entrance and exit passages corresponding to the entrance and exit platform side openings, and means carried by the platform standard for operating said gates independently of each other.

In testimony, that I claim the invention set forth above I have hereunto set my hand this first day of December, 1909.

CHARLES A. REMELIUS

Witnesses:

FREDK. C. FRAENTZEL,

FREDK. H. W. FRAENTZEL.