P. T. HANDIGES.

DOOR OPERATOR.

APPLICATION FILED MAY 9, 1908.

959,523.

Patented May 31, 1910.

2 SHEETS—SHEET 1.

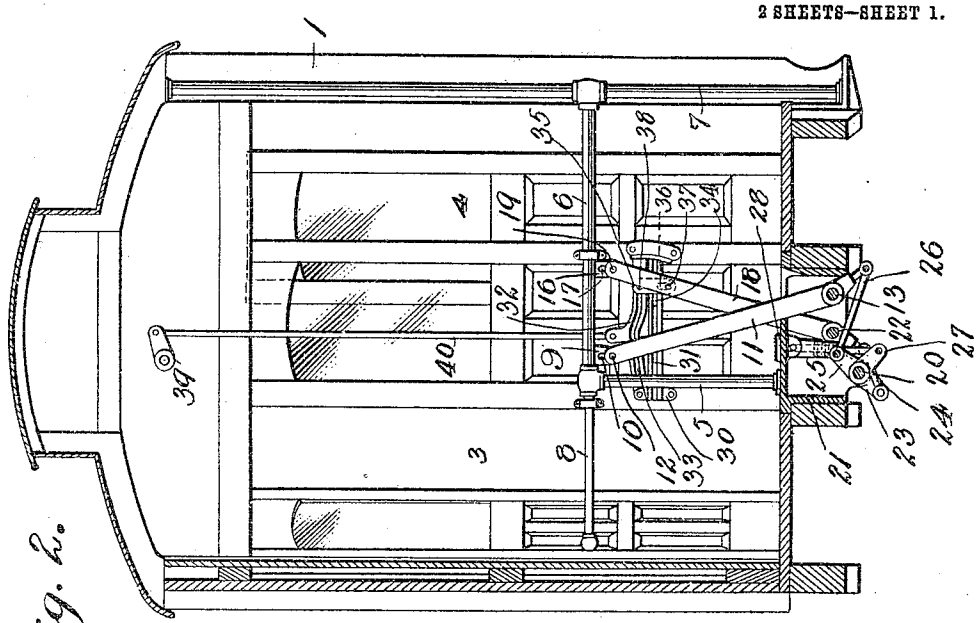

Fig. 2.

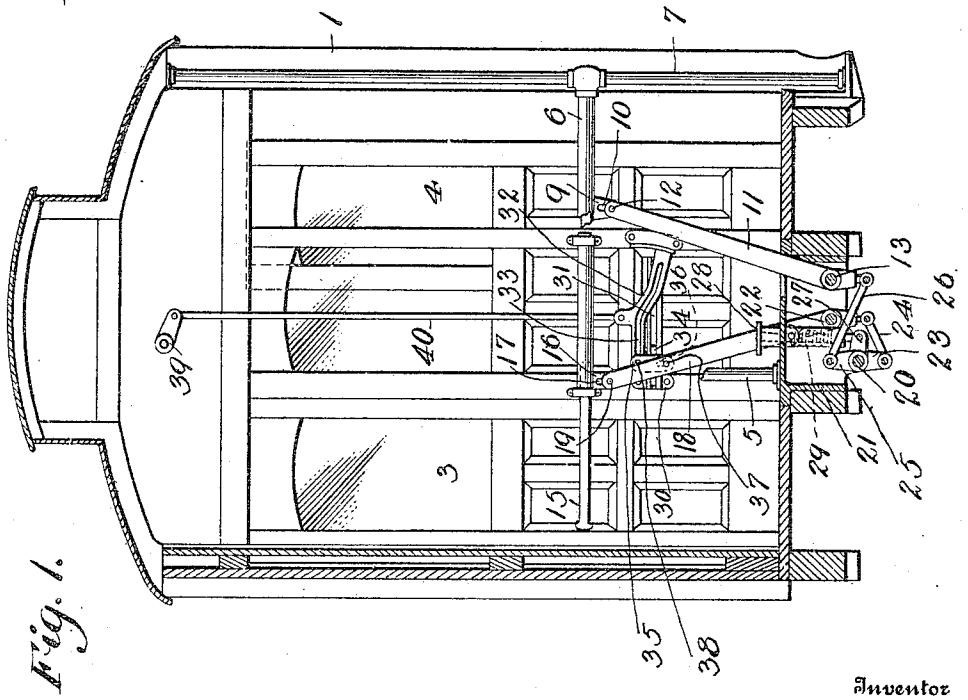

Fig. 1.

Witnesses

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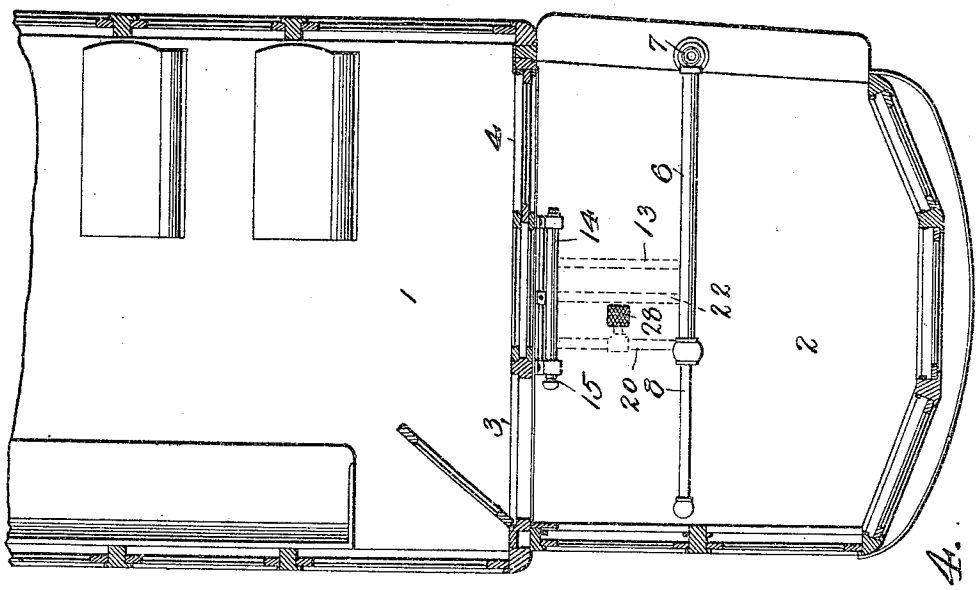

Fig. 4.

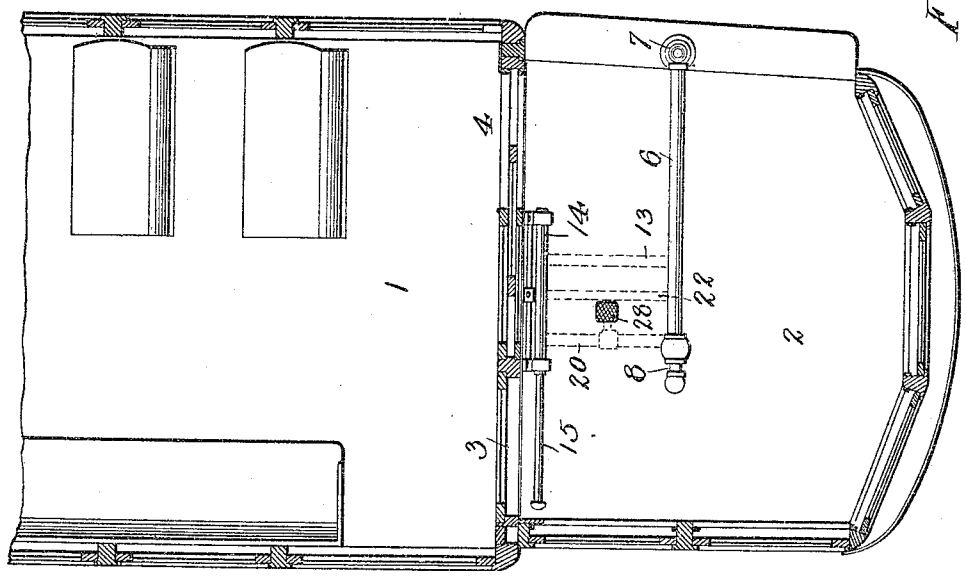

Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

PHILIP T. HANDIGES, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO ALBERT WAYCOTT, OF CLEVELAND, OHIO.

DOOR-OPERATOR.

959,523. Specification of Letters Patent. Patented May 31, 1910.

Application filed May 9, 1908. Serial No. 431,804.

To all whom it may concern:

Be it known that I, PHILIP T. HANDIGES, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Door-Operators, of which the following is a specification.

The object of my invention is to produce a gate or entrance to limit, to one at a time the passage of persons to vehicles, parks, buildings, and places of amusement.

While I have shown my invention as adapted to a car, it will be understood that its use is not limited to a car.

My invention consists of means normally preventing the passage of a person through the entrance, and means limiting the entrance to one person at a time, said means being simultaneously moved in opposite directions.

In addition to performing the functions for which it is primarily designed, my invention has the further advantage, that the operations of one of the barriers is peculiarly adapted to actuate a means for developing a movement to operate registering mechanism whereby the passage of persons through the passage-way is recorded.

My invention further consists of the parts and combination of parts as will be hereinafter more fully pointed out.

No claim is made herein to the means for developing the movement for actuating a registering mechanism as said means forms the subject-matter of a co-pending application Serial No. 513,132 dated August 16, 1909.

In the drawing, Figure 1 is an end elevation of a car, the platform being in section, showing the outer guard rail in open position, the entrance rail in closed position, and the register rod in normal position. Fig. 2 is a similar view, showing the entrance rail in open position, the outer guard rail in closed position, and the means for actuating register mechanism. Fig. 3 is a top plan view of a car, parts being in section and parts broken away, showing the outer guard rail in open position, the entrance rail in closed position, which are the normal positions of the gates. Fig. 4 is a similar view, showing the entrance rail in open position, and the outer guard rail in closed position.

I shall refer to the guard rails as gates, and in this connection will say that while I have shown the gates as constructed of rods, it will be understood that said gates may be constructed of sliding panels, or with alternately collapsible gates, or lazy tong construction.

1 represents a car of approved construction, 2 the platform thereof, 3 the entrance, and 4 the exit of said car. The platform is divided by means of the standard 5 and rail 6 into two passageways, one leading toward the entrance, the other leading from the exit of the car. The rail 6 is hollow and provided with an elongated slot through its under face. The outer end of the rail 6 is rigidly connected to the standard 7.

8 is a gate constructed to telescope within the rail 6, the rear end of which is provided with a depending lug 9 having an elongated slot 10.

11 is an operating lever for said gate having at its upper end a pin 12 adapted to enter and work in the elongated slot 10 of the lug 9, whereby said lever is connected with the gate 8. The lever 11 is fulcrumed near its lower end on the shaft 13.

14 is a tube secured to the car between the entrance and exit openings and is provided with an elongated slot through its under face.

15 is a gate constructed to telescope in the tube 14, the rear end of which is provided with a depending lug 16 having an elongated slot 17.

18 is an operating lever provided with a pin 19 at its upper end projecting in the elongated slot 17 of the lug 16, whereby the gate 15 is connected to said lever.

20 is a shaft journaled in the shaft box 21. The shaft 13 of the lever 11 and the shaft 22 of the lever 18 are mounted in said shaft box, as clearly shown in Figs. 1 and 2.

The crank 23 is rigidly mounted on the shaft 20 near the rear end of said shaft, and is connected by means of the link 24 to the lower end of the lever 18, as clearly shown in Figs. 1 and 2. The crank 25 is secured to the shaft 20 near its front end and connected to the lower end of the lever 11 by means of the link 26.

27 is a crank secured to the shaft 20 at right angles to the cranks 23 and 25, to which is pivotally connected the lower end

of the plunger 28, said plunger projecting above the platform and provided with a compression spring 29, whereby it is normally held projected above the platform of the car, as shown in Fig. 1.

30 is a casting secured to the car provided with a track 31.

32 is a lever pivotally connected to said casting 30 and provided with an elongated slot 33. It will be noted that one end of this lever has a downward deflection and that the elongated slot follows this deflection, so that the slot in effect is a cam slot.

34 is a guide adapted to travel in the track 31, said guide carrying a link 35, having an elongated slot 36, in which a pin 37 on the lever 18 projects. The upper end of the link 35 is provided with a pin 38, which projects in the cam slot 33 of the lever 32.

39 is a registering mechanism which is connected to the lever 32 by means of the rod 40.

It will be seen from the drawing that when the plunger 28 is forced downward from normal position, it rotates the shaft 20, which moves the lever 18 and causes the entrance gate 15 to slide into the tube 14; at the same time the rotation of the shaft 20 causes the lever 11 to move in an opposite direction and to slide the gate 8 out of the rail 6 to the position shown in Figs. 2 and 4. The movement of the lever 18 by means of the link 35 and pin 38 also operates the lever 32, register rod 40 and registering mechanism 39. The lifting lever 32 is so arranged that partial movement of the entrance gate 3 does not effect a register. It registers only when the gate 3 has been sufficiently moved to allow a person to enter the car. I may provide means to lock the entrance gate 3 during the absence of the attendant. I may also provide means for locking both of the gates in open position when it is desired, as in the case of the cars having gates at either end or where the front end of the car becomes an exit, and vice versa, or in cases where admission is free.

It is obvious that my invention is not limited to the cranks and link connections in the shaft box, inasmuch as the gates could be operated by hand lever or levers, or they may be operated by spur tooth segments.

As will be readily understood when the gate 15 is retracted to permit a person to enter the car after having paid the fare, the gate 8 is simultaneously moved in an opposite direction to prevent a person approaching the gate 15 until after the preceding person has entered the car and the gate 15 closes.

From the above, it will be seen that my invention consists broadly in an entrance gate controlling the entrance of one person at a time by laterally moving gates, which move simultaneously in opposite directions.

Inasmuch as changes may be made in the details of construction shown without departing from the spirit or scope of my invention, I do not wish to be limited to the details of construction shown.

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

1. Means for controlling the admission of persons comprising fixed barriers lying substantially transverse to the direction of entrance, having openings therethrough to provide a passage-way for entrance, and spaced apart to provide a standing space for an attendant between said fixed barriers, and movable barriers mounted in controlling relation to the openings through said fixed barriers, extending therefrom at a distance apart to admit a single passenger between them and having means connecting them through which they are forced to move reciprocally to alternately open and close said openings; said attendant space opening into the space between the movable barriers, and a connecting means between the movable barriers being disposed outside of said space.

2. Means for controlling the admission of persons comprising fixed barriers lying substantially transverse to the direction of entrance, having openings therethrough to provide a passage-way for entrance, and spaced apart to provide a standing space for an attendant and an auxiliary passage-way between said fixed barriers, and movable barriers mounted in controlling relation to the openings through said fixed barriers and having means through which they may be operated to alternately open and close said openings; the operating means for the movable barriers being connected in a plane extending across but outside of the attendant space so as to avoid obstructing the latter, and said connection enforcing reciprocal movements in the movable barriers.

3. Means for controlling the admission of persons comprising fixed barriers lying substantially transverse to the direction of entrance, and spaced apart to provide a standing space for an attendant between said fixed barriers, and movable barriers mounted in controlling relation to the openings through said fixed barriers and having means through which they may be operated to alternately open and close said openings; the operating means for the movable barriers being connected in a plane extending across but outside of the attendant space so as to avoid obstructing the latter, and said connection enforcing reciprocal movements in the movable barriers, and having controlling means operable from said attendant space.

4. In combination with a barrier having

entrance and exit openings, means for controlling admission through the entrance opening comprising a fixed barrier spaced from the barrier first named providing an attendant space between them barring ingress through the exit opening and providing an auxiliary passageway communicating with said entrance opening, movable barriers mounted in controlling relation to the opening past the fixed barrier and the entrance opening respectively, and means through which said movable barriers may be controlled to enforce reciprocal movements in them.

5. In combination with a barrier having entrance and exit openings, means for controlling admission through the entrance opening comprising a fixed barrier spaced from the barrier first named providing an attendant space between them barring ingress through the exit opening but leaving an opening giving access to the entrance, movable barriers mounted in controlling relation to the opening past the fixed barrier and the entrance opening respectively, and means through which said movable barriers may be controlled to enforce reciprocal movements in them; said attendant space communicating with the exit and also with the space between the movable barriers.

6. Means for controlling admission of persons comprising a pair of fixed barriers having openings past them providing a passage-way and providing between them an attendant space and an emergency exit space communicating with the passage-way extending past the barriers, movable barriers suitably mounted in controlling relation to the openings past the fixed barriers, and suitable means for opening and closing said movable barriers.

7. Means for controlling admission of persons comprising a pair of fixed barriers having openings past them providing a passage-way and providing between them an attendant space and an emergency exit space communicating with the passage-way extending past the barriers, movable barriers suitably mounted in controlling relation to the openings past the fixed barriers, and suitable means for opening and closing said movable barriers, an exit opening into said emergency exit passage being also provided from the place to which admission is controlled.

8. In combination with a bulk-head or partition having an entrance opening having a freely opening weather-door and a movable barrier in passage-controlling relation to said door, a fixed barrier carrying a movable barrier spaced from said bulk-head a distance to provide an attendant space and a passenger space and having an opening past it in alinement with the opening through the bulk-head, controlled by the last named movable barrier, and means connecting the two movable barriers enforcing reciprocal movements thereto.

9. The combination with a street car having an admission opening, of means for limiting passage through said opening to a single person at a time, comprising a movable barrier disposed in passage-controlling relation to said admission opening and movable transversely and to one side thereof, a fixed barrier suitably spaced from said admission opening, to provide an attendant space and a passageway, and leaving an opening in alinement with the admission opening, said fixed barrier having a movable barrier operable reciprocally with the movable barrier first named, and means connecting the two movable barriers enforcing reciprocal movements thereto.

10. The combination with a street car having a platform and a partition between said platform and the body of the car, formed with an admission opening therethrough; of means for limiting passage through said admission opening to a single person at a time, comprising a movable barrier adjacent to said partition and movable transversely and to one side of the admission opening therethrough, a fixed barrier suitably spaced from the partition and leaving an opening in alinement with said admission opening, and a movable barrier in controlling relation to the opening past said fixed barrier, and operable reciprocally with the movable barrier first named; the space between the partition and barrier providing a conductor's space and communicating with the passage-way provided by the openings past the fixed barrier and through the partition.

11. The combination with a street car having a platform and a partition between said platform and the body of the car, formed with an admission opening therethrough; of means for limiting passage through said admission opening to a single person at a time, comprising a movable barrier adjacent to said partition and movable transversely and to one side of the admission opening therethrough, a fixed barrier suitably spaced from the partition and leaving an opening in alinement with said admission opening, and a movable barrier in controlling relation to the opening past said fixed barrier, and operable reciprocally with the movable barrier first named; the space between the partition and barrier providing a conductor's space and communicating with the passage-way provided by the openings past the fixed barrier and through the partition, and said fixed barrier extending transversely across the platform to provide an exit passage-way separated from the portion of the platform traversed in entering the car.

12. The combination with a street car having a platform and a partition between said

platform and the body of the car, formed with an admission opening therethrough; of means for limiting passage through said admission opening to a single person at a time, comprising a movable barrier adjacent to said partition and movable transversely and to one side of the admission opening therethrough, a fixed barrier suitably spaced from the partition and leaving an opening in alinement with said admission opening, and a movable barrier in controlling relation to the opening past said fixed barrier, and operable reciprocally with the movable barrier first named; the space between the partition and barrier providing a conductor's space and communicating with the passage-way provided by the openings past the fixed barrier and through the partition, and said fixed barrier extending transversely across the platform to provide an exit passage-way separated from the portion of the platform traversed in entering the car, said partition being also provided with an exit opening giving access to said exit passage-way on the platform.

13. The combination with a street car having an admission opening, of means for limiting passage through said opening to a single person at a time, comprising a movable barrier disposed in controlling relation to said admission opening and movable transversely and to one side thereof, and a fixed barrier suitably spaced from said admission opening, leaving an opening in alinement with the admission opening and having a movable barrier operable reciprocally with the movable barrier first named, the operating means for said movable barriers being connected by means lying beneath the platform whereby reciprocal movements are enforced therein, and means being provided operable from the attendant space, to actuate the operating connections of the movable barriers.

14. In a means for limiting passage through a car entrance or other passageway, the combination of a pair of barriers, supports in which said barriers are slidingly mounted with a space between them providing an attendant's space and suitable to admit a single passenger, suitably fulcrumed levers connected with the respective barriers for imparting reciprocating movement thereto, an intermediately fulcrumed lever mounted outside of said attendant's space and having its respective ends connected to said operating levers, whereby said levers are moved in opposite directions simultaneously, and a plunger having a crank connection with said intermediately fulcrumed lever.

PHILIP T. HANDIGES.

In presence of—
C. S. SWANN,
ARTHUR B. OLIVER.