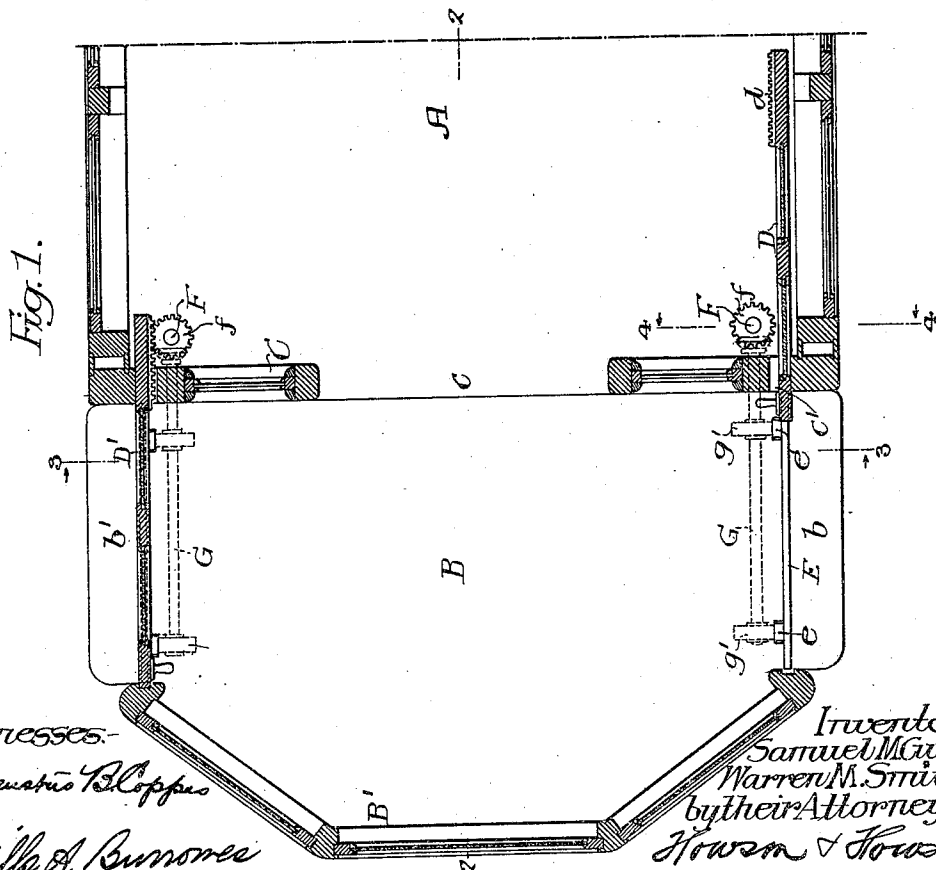
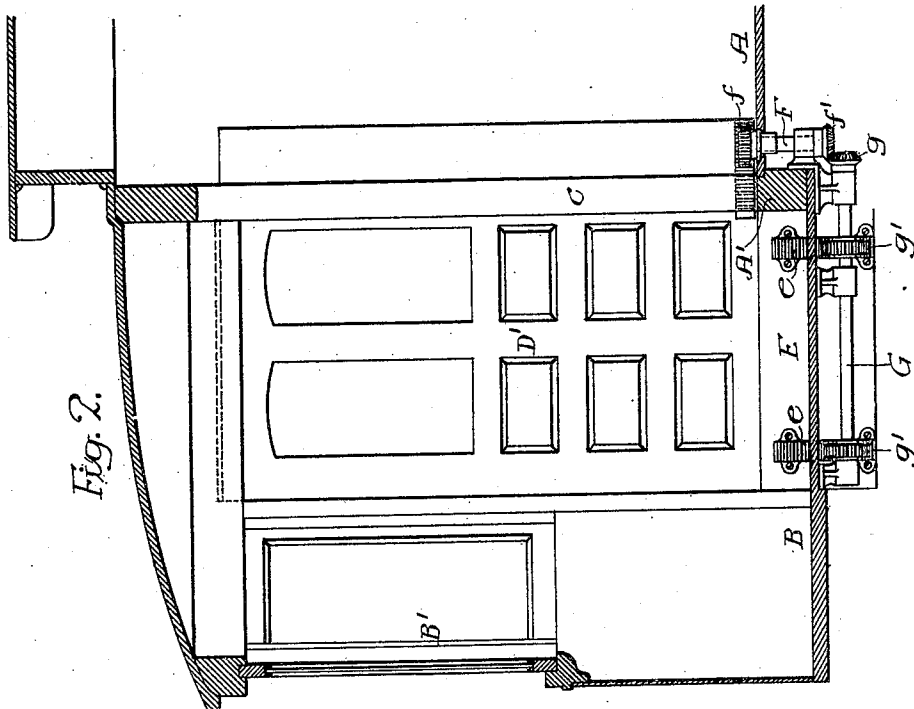


S. M. CURWEN & W. M. SMITH.  
PASSENGER CAR.  
APPLICATION FILED SEPT. 10, 1908.

Patented Sept. 14, 1909.  
2 SHEETS—SHEET 1.

934,142.



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Fig. 3.

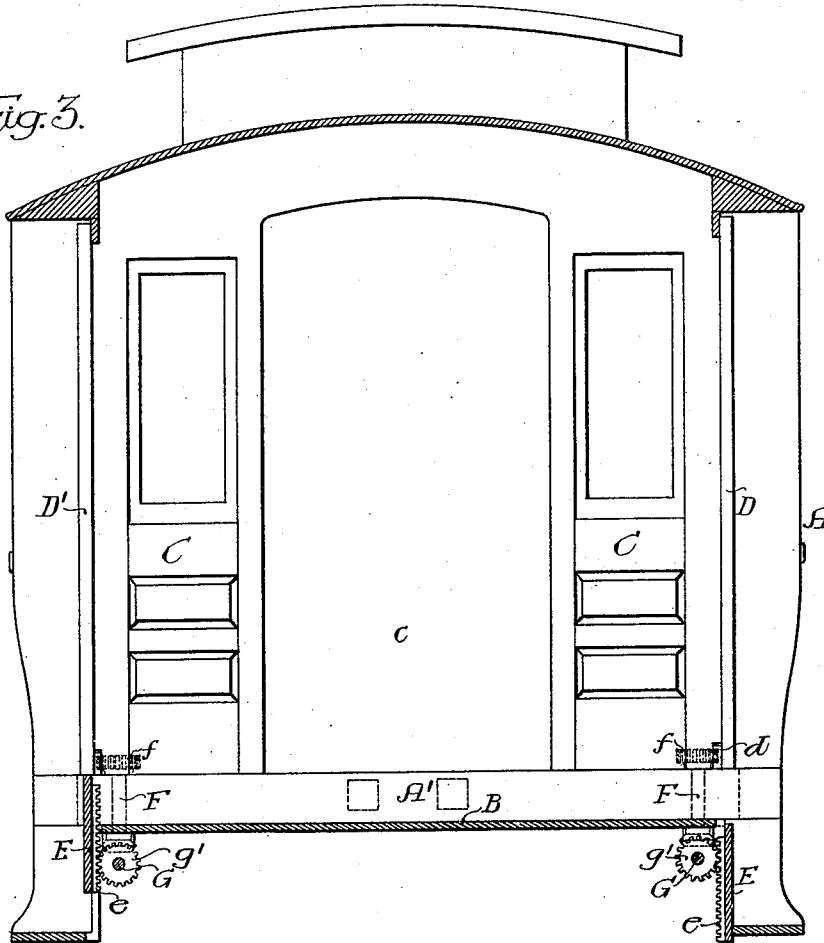
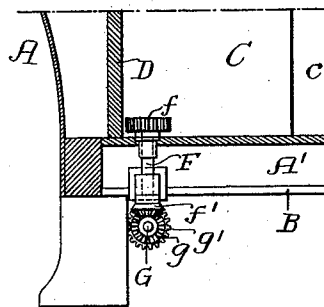


Fig. 4.



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# UNITED STATES PATENT OFFICE.

SAMUEL M. CURWEN, OF HAVERFORD, AND WARREN M. SMITH, OF MOORES, PENNSYLVANIA, ASSIGNORS TO THE J. G. BRILL COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

## PASSENGER-CAR.

Specification of Letters Patent. Patented Sept. 14, 1909.

934,142.

Application filed September 10, 1908. Serial No. 452,454.

*To all whom it may concern:*

Be it known that we, SAMUEL M. CURWEN and WARREN M. SMITH, citizens of the United States, residing in Haverford, Pennsylvania, and Moores, Pennsylvania, respectively, have invented certain Improvements in Passenger-Cars, of which the following is a specification.

Our invention relates to certain improvements in passenger cars of the type in which a door is provided at one or both sides of the platform.

The object of our invention is to provide means for closing the space between the bottom of the door and the floor of the platform without cutting away the sills of the car.

Our invention can be applied to any type of car having a platform and in the drawings we have shown our invention as applied to the ordinary type of electric passenger car.

In the accompanying drawings:—Figure 1, is a sectional plan view of one end of a passenger car illustrating our invention; the door on one side of the platform being open and the door on the other side being closed; Fig. 2, is a longitudinal sectional view on the line 2—2, Fig. 1; Fig. 3, is a transverse sectional view on the line 3—3, Fig. 1; and Fig. 4, is a transverse section on the line 4—4, Fig. 1.

A is the body of the car.

B is the platform.

C is the transverse partition separating the body of the car from the platform and having the usual doorway *c*.

B' is the vestibule casing inclosing the front of the car. On each side of the platform are doors D, D' adapted to slide in ways in the car body. The doors pass through slots *c'* in the partition C and can be separated from the interior of the body of the car by any suitable partition, or they can be exposed, as desired. The doors are mounted so as to clear the sill A' of the car body, thus the sill is not weakened by placing the doors at the side.

The floor of the platform is usually below the floor of the car and consequently in order to entirely close the side of the platform with a single door the sill A' must be cut away sufficiently to allow the bottom of the door to be on a line with the floor of the

platform, if the sill is not cut away the bottom of the door will be in line with the floor of the car body and consequently when the door is closed there is an opening between the bottom of the door and the platform support.

The object of our present invention is to inclose the space between the door and the platform without cutting away the transverse sill A' or in any way weakening the construction of the car body.

We mount on each side of the platform sliding doors E, E'. These sliding doors are adapted to ways in the platform and are arranged to move vertically in and out of position. When in the raised position they abut against the underside of the doors D, D' when closed, and when in the open position are below the platform, so as not to interfere with passengers alighting from or boarding the car.

In the present instance we actuate the doors E, E' from the doors D, D' and we so time the mechanism that the doors E, E' will not be elevated until the doors D, D' are partially closed, so as not to trip any passenger endeavoring to board or leave the car when the doors are partially open.

In the present instance the mechanisms for operating the doors are identical and we will describe the mechanism in reference to the doors D and E. On one side of the door D near the rear is a rack *d* which engages with a pinion *f* on a vertical shaft F and this shaft extends through the framing of the car body and has at its lower end a bevel wheel *f'* which meshes with a bevel wheel *g* on a longitudinal shaft G adapted to bearings in the framework of the car. Near each end of the shaft G are pinions *g'*, which mesh with vertically arranged racks *e, e* secured to the back of the door E. By this arrangement as the door D is closed the rack *d* comes in contact with the pinion *f* on the vertical shaft F and this vertical shaft is turned and motion is imparted to the bevel gears on the shaft G, and as this shaft is geared to the door E the door will be raised as the door D is closed; the parts being so timed that the upper side of the door E will contact with the lower edge of the door D.

On the first movement of the door D the door E will be withdrawn so that it will be

clear of the platform before the door D can be opened sufficiently to allow a passenger to get on or off the car.

By the above described arrangement, we are enabled to completely inclose the platform without cutting away or weakening the frame of the car body and without placing the door on the outside of the car body.

We claim:—

- 10 1. The combination in a car body, of a platform, a transverse partition separating the platform from the body of the car, a channel in the partition, a sliding door mounted above the sill of the car and extending through the channel and adapted to extend over the platform, with a vertically arranged supplemental door at one edge of the platform, and gearing between the sliding door and the supplemental door whereby on the movement of the sliding door the supplemental door will be actuated.
- 25 2. The combination in a passenger car, of a platform, a sliding door adapted to close one side of the platform, a vertically arranged supplemental door at the side of the platform, a rack on the sliding door, a vertical shaft having a pinion thereon meshing with the rack, a rack on the supplemental door, a shaft, a pinion on the shaft meshing with the said rack, and gearing between the
- 30

vertical shaft and the horizontal shaft by which the movement of the sliding door or the supplemental door will be actuated.

3. The combination in a passenger car, of a body portion, a platform, a sill at the edge of the floor of the body portion, said floor of the body portion being above the floor of the platform, a channel in the framework of the car, a sliding door adapted to said channel and arranged to extend over the platform to close one side of it, a rack mounted at the rear of the door, a vertical shaft having a pinion arranged to mesh with the rack when the door is partly opened, a vertically arranged supplemental door at the edge of the platform, a rack on said door, a horizontal shaft, a pinion thereon meshing with the rack, and gearing by which the horizontal shaft is driven from the vertical shaft, the parts being so arranged that the sliding door will be partly closed before the supplemental door will be elevated.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

SAML. M. CURWEN.  
WARREN M. SMITH.

Witnesses:

HENRY C. ESLING,  
JOHN H. OHLSSON.