To all whom it may concern:

Be it known that I, Warren M. Smith, a citizen of the United States, residing in Moors, county of Delaware, State of Pennsylvania, have invented certain Improvements in Platforms for Passenger-Cars, of which the following is a specification.

One object of this invention is to provide a vertically movable floor for the entrance and exit platform of a passenger car, so that the floor at the entrance can be raised without the aid of steps at the outside of the platform.

Another object of the invention is to provide additional folding seats at the platform.

Still another object of the invention is to provide a seat which can be shifted from one side of the car to the other to close the passageways leading to and from the platform.

In the accompanying drawings: Figure 1, is a skeleton side view of a center entrance passenger car to which my invention is applied; Fig. 2, is an enlarged plan view of the platform portion of a center entrance car illustrating my invention; Fig. 3, is a transverse sectional view showing the platform tilted in one direction to allow passengers to enter or to leave the car on the right hand side; Fig. 4, is a transverse sectional view showing the platform tilted to allow passengers to enter or leave the car on the left hand side; Fig. 5, is a transverse sectional view through the platform showing a modification of the invention, in which the inclined floor extends from one side to the other of the car; Fig. 6, is a transverse sectional view of another modification in which the central portion of the platform is fixed, there being a movable section on each side thereof. Fig. 7, is a plan view illustrating the tilting platforms at each end of a car; Figs. 8 and 9, are perspective views showing a transversely divided platform and tilting members located side by side, one tilting to the right and the other to the left; Fig. 10, is a modification illustrating the platform transversely divided with a central fixed section and tilting members diametrically opposite each other; Fig. 11, is a view showing the platform made in two sections vertically movable, one being raised when the other is lowered so that there will be a step on the inside of the car; and Fig. 12, is a view showing two vertically movable sections with a central fixed section.

Referring to the drawings, 1 is the body of a car.

2 is the center entrance having a floor at a lower level than that over the main wheels of the truck; the floor of the body of the car at each side of the center entrance being inclined from one level to the other, as shown by dotted lines, Fig. 1.

In order to dispense with steps or very steep inclines within the car, I provide a tilting floor 3, which can be tilted to either side of the car in order to allow passengers to enter or to leave the car at either side on an incline. When a passenger desires to enter a car of this type, it is only necessary to make one step onto the inclined floor of the platform. This floor of the body of the car can be inclined as shown by dotted lines, Fig. 1, or it can be level, according to the type of truck upon which the car body is mounted.

Referring to Figs. 2, 3 and 4, a low partition 5 is located at the transverse center of the car at each side of the center entrance and separates the platform from the body of the car, leaving passageways 6, 6 between the partitions and the sides of the car. The movable floor 3 of the platform extends from one side of the car to the other and from one partition 5 to the other, in the present instance. The floor 3 is made in three sections 3a, 3b and 3c. 3c is the central section and is mounted on a shaft 7, so that it can be tilted to one side or the other, and hinged to this central tilting section.
are the side sections 3<sup>th</sup>, 3<sup>rd</sup>. Secured to the underside of the central section 3<sup>rd</sup> are angular supporting arms 8 which project under the sections 3<sup>th</sup> and 3<sup>rd</sup> and support said sections when they are raised on a level with the floor 4 of the car body, but when they are lowered they rest on the sills 9 at each side of the platform, as shown in Figs. 3 and 4, and the arms 8 are clear of said sections. 10 and 11 are two rock shafts, each having arms 12 with rollers or pins 13 at their outer ends, which engage hooks 14 secured to the arms 8 when they are in an upright position, thus rigidly holding the floor.

Arms 15 on the rock shafts are connected together by a rod 16. 17 is an operating lever which extends through the floor at one end of the platform and engages the rod 15, this lever is pivoted at 18 and has a suitable handle as shown. The sections 3<sup>th</sup> and 3<sup>rd</sup> are preferably the same width as the passageways 6 and are of sufficient length to allow the conductor to stand thereon. Other means may be provided for tilting the platform without departing from the essential features of the invention, as it will be understood that this platform is only tilted at the terminals of the railway or when at any point it is desired to change the entrance of the car from one side to the other.

In the drawings I have shown a portion of the side of the platform closed by panels 19, leaving doorways 20 on diagonally opposite sides closed by double folding doors 21. These doors may be arranged to slide without departing from the spirit of the invention. The doorways are of a sufficient width for passengers to enter and to leave the car through the single doorway. If the entrance is on the side indicated in Fig. 2, then the other doorway is closed, as shown, and the passengers can enter when the door on the entrance side is opened, as indicated in said figure and can follow the path indicated by the arrows; the conductor standing at the point 2 back of the door operating stand 22 to collect the fares and to direct passengers.

23, 24 are seats which fold against the panels 19.

24, 25 are seats which fold against the partitions 5. The seats can be lowered at the entrance side of the car, as indicated in the drawings, and can be raised out of the path of the passengers on the opposite side of the car.

In order to prevent the use of the passageway at the entrance or egress side of the platform, I provide movable seats 26 which are mounted on wheels 26 which travel on sunken transverse rails, so that they can be shifted from one side of the car to the other to close the passageway at either side. Instead of the seats, doors or other barriers may be provided to prevent the use of the passageways on the entrance and egress side of the platform.

While I have shown my improved platform located at the center of a car, it will be understood that it may be located at either end thereof, without departing from the essential features of the invention.

In Fig. 7, I have illustrated a car having a platform at each end. Each platform has a tilting section and beyond the tilting section is the fixed platform for the motorman. The tilting sections are so arranged that they will tilt in the same direction so as to dispense with the usual steps at the side of a car. When the car is going in one direction the platform is tilted to the right hand side, so that passengers can enter or leave the car at that side and at either end. Where the front platform is used only by the motorman and not by passengers, and it is desired to use either end of the car for the motorman's station, the tilting platform can be held in a central horizontal position at the forward end of the car and the rear platform can be tilted to either side.

In Fig. 5, I have shown the platform floor 3<sup>rd</sup> made in a single piece extending from one side of the car to the other and pivotally mounted on a shaft 7<sup>th</sup>. The same mechanism is used to tilt and hold the floor in the inclined position as shown in Figs. 2 and 3. The floor of the body of the car preferably has a tapered inclined sill 27 to coincide with the incline of the floor 3<sup>rd</sup> of the platform, although a step may be used if found desirable.

In Fig. 6 I have shown the central portion of the floor of the platform 3<sup>rd</sup> fixed and the side portions 3<sup>th</sup> and 3<sup>rd</sup> hinged thereto so as to be raised on a level with the floor 10 of the car body, or lowered to the side sill, as shown, and the operating mechanism may be the same as that previously described in connection with Figs. 8 and 4. In this instance, the partitions 5<sup>th</sup> are located at each side of the center entrance 6<sup>th</sup>.

In Figs. 8 and 9, I have shown the tilting sections of the platform divided transversely so that there will be fixed sections 28 and movable sections 29 and 30. These sections are of the width of the doorway of the car, while the portions 28 are opposite to the fixed panels. Fig. 8 shows the section 29 raised and the section 30 lowered and resting on a sill. In Fig. 9, I have illustrated the section 29 lowered and the section 30 raised.

In Fig. 10, I have shown a divided platform with a fixed central section 31, similar to that illustrated in Fig. 6, and movable side sections 32 and 33. The portions 34 are fixed and form a continuation of the central section 31. When one side of the platform...
is open the movable section is lowered on that side, while the other section is raised to a level with the balance of the platform.

In some instances, instead of tilting the platform, I may provide the platform with two independent sections 95 and 96, raised by pivoted arms 97, so that when one section is lowered it will be on a level with the sill at the side of the platform and the other will be raised on a level with the floor of the body of the car, see Fig. 11.

In Fig. 12, I have illustrated a modification of the device illustrated in Fig. 11, and I have shown a central fixed platform 98 with vertically movable sections 40 at each side thereof.

By the above construction, I am enabled to use a comparatively high track and to elevate the body of the car sufficiently to allow for the location of air cylinders and other appliances under the body of the car. Hereabove, where the low stepless platform was used, this mechanism had to be located under the seats and overhead.

I claim:

1. The combination of a car having a doorway at one side and a platform, said platform having a fixed portion and a tilting portion, said tilting portion being arranged to form an inclined way from the doorway at the side of the car to the fixed portion.

2. The combination in a passenger car having doorways at opposite sides thereof, of a platform extending from one side of the car to the other at the doorways; a central pivot for the platform; and means for tilting the platform so that it will be lower than the pivot at the open doorway and higher than the pivot at the opposite side.

3. The combination of the body of a car having a floor; a platform having a sill at each side lower than the floor; a movable floor for the platform; with means for raising one portion of the floor to or about the level of the floor of the body of the car and lowering another portion to or about the level of the sill.

4. The combination in a passenger car having a doorway at one side, the sill of the doorway being below the floor of the car, of a platform having a portion hinged so that it can be raised to about the level of the floor of the car or lowered to a point about on a line with the sill of the doorway.

5. The combination of a passenger car having a platform made in three sections, the central section being pivotally mounted so as to tilt in either direction and the two side sections being hinged to the central section and when one section is raised it will be horizontal while the other section will be on an incline.

6. The combination in a car having a plat-
the floor; arms on each rock shaft; hooked sockets on the underside of the floor arranged to be engaged by the arms; and means for actuating the rock shafts in unison to raise one portion of the floor and to lower the other portion.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

WARREN M. SMITH.

Witnesses:

Wm. E. Shupe,

Wm. A. Barr.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D.C."