The principal object of the present invention is to make better use of the space within a double deck coach so as to provide accommodations for a greater number of passengers, to make the aisles and seats wider, and to provide more baggage space, all without increasing any of the dimensions of a comparable standard coach, except to make it very slightly higher.

A further object of the invention is so to arrange the seats within a double deck coach as to accommodate the greater number of passengers on the upper deck, well above the impact line, and yet to have the center of gravity low enough to insure safety.

Another object of the invention is so to arrange the seats upon the lower deck as to protect the passengers from sideswipe.

Another object of the invention is to provide a double deck coach in which the greater part of the pay load is carried inside of the track of the wheels.

Still another object of the invention is to provide a double deck coach in which the lower deck is depressed between adjacent sets of wheels, thus lowering the center of gravity.

Yet another object of the invention is to arrange the seats for the passengers upon the upper deck so as to increase visibility.

A further object of the invention is to provide a double deck coach having a substantially centrally located entrance door leading to a central vestibule from which all seats within the coach are substantially equally accessible.

A further object of the invention is to provide a double deck coach having a central vestibule which is provided with an emergency exit which is equally accessible to all the passengers within the coach.

A further object is to provide a double deck coach having a central vestibule which is located toilet and washroom facilities and an attendant's station.

Other objects of the invention and the numerous advantages thereon will more fully be brought out as the description proceeds.

In the accompanying drawings, we have illustrated a practical embodiment of our invention, but it is to be understood that we do not confine ourselves to the precise details therein disclosed. It will be obvious to those skilled in the art that the broad concepts of our invention are susceptible of embodiment in other forms without departing from the spirit of our invention or sacrificing any of its advantages.
lary to Fig. 4 that this vestibule 25 is located substantially centrally of the vehicle as will be more fully brought out. This location of the vestibule results in numerous advantages in our construction.

The said central vestibule 25 extends across the entire width of our coach and is large enough to provide an ample washroom 26, place for a water cooler 27, and an attendant's station 28. There is sufficient space at the attendant's station for such equipment as may be necessary in case it is desired to provide the passengers with light refreshments.

Leading forwardly from the vestibule 25 and along the righthand side wall 11 is an aisle 30 by which access may be had to the lower deck seats 31.

Adjacent the opposite or left side wall 11 extends a baggage compartment 32, to which access may be had from the outside as through a door 33 (see Fig. 7).

It will thus be seen that the lower deck seats 31 are located within a separate compartment which is easily reached from the central vestibule 25. This compartment may be used as a smoking room or for card playing, and the like. These lower deck seats 31 may be so constructed and positioned that they may be removed from the compartment and thus convert it into a freight or baggage space whenever the seats are not required for the accommodation of passengers. It is possible, also, to arrange the seating within this lower deck compartment so as to provide sleeping space, if desired.

It will be noted that the passengers occupying the lower deck seats 31 are protected from side-swipe because the said seats are spaced inwardly from one of the side walls by the aisle 30 and from the other side wall by the baggage space 32.

The upper deck comprises a forward portion 35 and a rear portion 36 extending in opposite directions from the central vestibule 25.

The forward portion 35 of the upper deck is reached by steps 37 which ascend from the vestibule 25 adjacent the side wall 11 which is opposite the entrance door 21. The said steps 37 communicate with an aisle 38. The seats 39 on the forward portion 35 of the upper deck extend from the aisle 38 across the width of the coach to a baggage space 40, the bottom 41 of which is raised above the level of the floor 35 (see Fig. 7) so as to provide additional and adequate head room over the lower deck aisle 30.

It will thus be seen that the passengers occupying the seats 39 on the forward portion 35 of the upper deck are not only located above the impact line but they are also protected from any side-swipe by reason of the aisle 38 and the baggage space 40 which are run parallel to the side walls and space the seats therefrom.

The rear portion 36 of the upper deck extends rearwardly from the central vestibule 25 and is reached by steps 42 communicating with an aisle 43 which is located substantially centrally of the said rear portion 36 of the upper deck. On this part of the upper deck are located seats 44, preferably in pairs on opposite sides of the aisle 43, and at the rear of this part of the deck we have located a series of seats 45.

The rear part of the upper deck is separated from the forward part by a partition 46 which is made of transparent plastic material so as not to interfere with the visibility of the passengers occupying the rear portion of this upper deck.

The driver's seat 47 (see Figs. 2 and 3) is located on a separate platform 48 which is somewhat lower than the forward part 35 of the upper deck so that the passengers occupying the seats 39 may have clear visibility in a forward direction through the windshield. The driver's compartment is separated from the passenger space of the upper deck by a partition 49 which, like the partition 46, may also be made of transparent plastic material.

Adjacent the driver's compartment, but on a somewhat lower platform 50, we have located two additional passenger seats 51. These seats are separated from the driver's compartment by a transparent plastic partition 52. The seats 51 are reached from the lower deck aisle 30 by way of the steps 52. The driver may reach his seat 47 in the same way or he may ascend the steps 31 and go forwardly along the aisle 38.

One of the outstanding improvements in our present construction is the provision of adequate baggage and package space. We have already referred to the compartments or spaces 32 and 40. In addition to these, we have provided baggage spaces 54 below the rear portion 36 of the upper deck and on each side of the central aisle 43. These spaces are accessible from the outside of the vehicle through doors 55.

There is also a large baggage space 56 which is accessible from the outside through doors 57. At the rear of the coach there is an additional baggage space 58 which is accessible through a rear door 59.

At the forward end of the vehicle, and beneath the platform 56, we have provided a compartment 60 for the storage of a spare tire and for tools and other accessories. This compartment is accessible from the front through a door 61.

Adequate interior package space is also provided, as the racks above the seats on the upper deck and the top of the baggage compartment 32 on the lower deck.

Communicating with the vestibule 25, and substantially directly opposite the main entrance door 21, we have located an emergency exit door 62. As will be seen, this emergency exit door 62 is readily accessible to all the passengers within the coach.

The foregoing described arrangement has a great advantage in that it provides for ease of movement of passengers into and out of the coach. All passengers will enter by the central door 21 into the vestibule 25. As will be seen, the floor of the vestibule is on the same level as the portion 23 of the lower deck. From the central vestibule, the passengers proceed to their seats by the steps and aisles heretofore described, all of which lead from the vestibule. In this way, all the seats are substantially equally accessible from the vestibule and the emergency exit 62 is conveniently reached by all passengers.

Also, because of the adequate space provided in the centrally located vestibule 25, it is plain that the toilets and washroom facilities located therein are readily accessible.

Our construction also contemplates adequate space for an air conditioning and heating system. Air will enter the coach from the system through inlets ducts 64 located in the top of the coach and in the ceiling of the lower deck compartment, and adequate return grills 65 are provided near the floor of each compartment and along the side walls of the rear aisle 43.
The foregoing described arrangement provides for fifty passengers, thirty-eight of whom are carried on the upper deck, well above the impact line, and twelve of whom are located on the lower deck inwardly from the side walls and thus protected from sidewipie. The coach thus described which accommodates fifty passengers is of the same horizontal dimensions, that is, length and width, as coaches heretofore designed and which accommodate only forty-one passengers. Thus, we have achieved in this arrangement an increase of twenty per cent in passenger carrying capacity. We have also proportionately increased the amount of baggage space so as to allow substantially the same amount per passenger, namely, about four and one-half cubic feet. In addition, the seats and aisles are wider.

This has been accomplished by only a very slight increase, about ten inches, in the height of the coach. Despite this increase in height, the coach, when unloaded, is only ten feet ten and one-half inches high, which is well under the limit of vertical dimension provided by most State regulations. At the same time, the seats are so placed as substantially to lower the center of gravity, and by keeping the load well balanced and distributed, we improve the safety of operation.

It is within our contemplation that the emergency exit door 62 may be used as the main entrance to the coach, in which case the door 21 may serve as the emergency exit. Because passenger coaches of our type are usually loaded and unloaded in depots or at stops off the highway, there is no danger in having the passengers enter and leave by a door in the left side of the coach, and there may be advantage in locating the emergency exit on the right side.

We claim as our invention:

1. A double deck coach comprising a body having side walls, upper and lower passenger-carrying decks in said body, a vestibule extending across said body, and a plurality of seats on said upper deck placed back to back above said vesti-

bule, said upper deck being elevated under such seats and in the space between the backs thereof, whereby to provide head room in said vestibule without increasing the height of said body.

2. A double deck vehicle comprising a body having side walls, upper and lower passenger-carrying decks in said body, a vestibule extending across said body, an entrance door in one of said side walls leading to said vestibule, an emergency exit door in the other of said side walls leading from said vestibule, and a plurality of seats on said upper deck placed back to back above said vestibule, said upper deck being elevated under said seats and in the space between the backs thereof, whereby to provide head room in said vestibule without increasing the height of said body.

ORVILLE S. CAESAR.
RAYMOND LOEWY.

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Dedication


Hereby dedicates to the public the unexpired term of said patent.

[Official Gazette October 1, 1957.]