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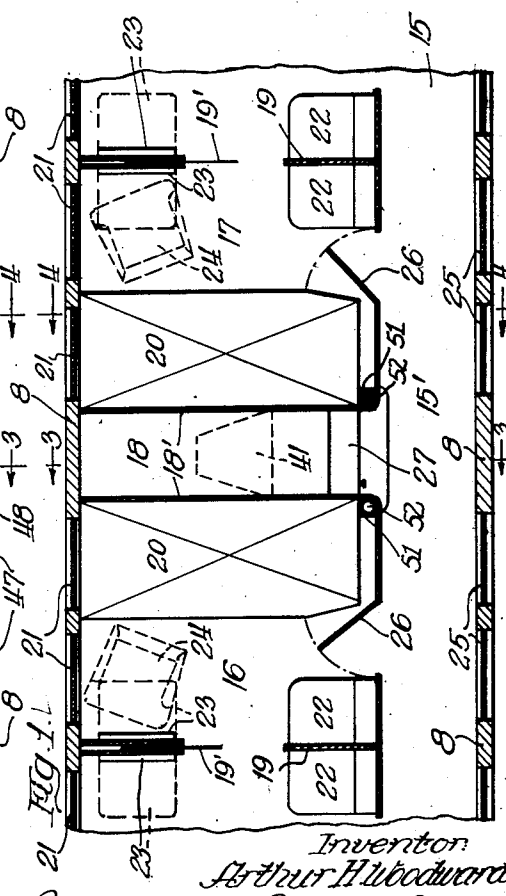
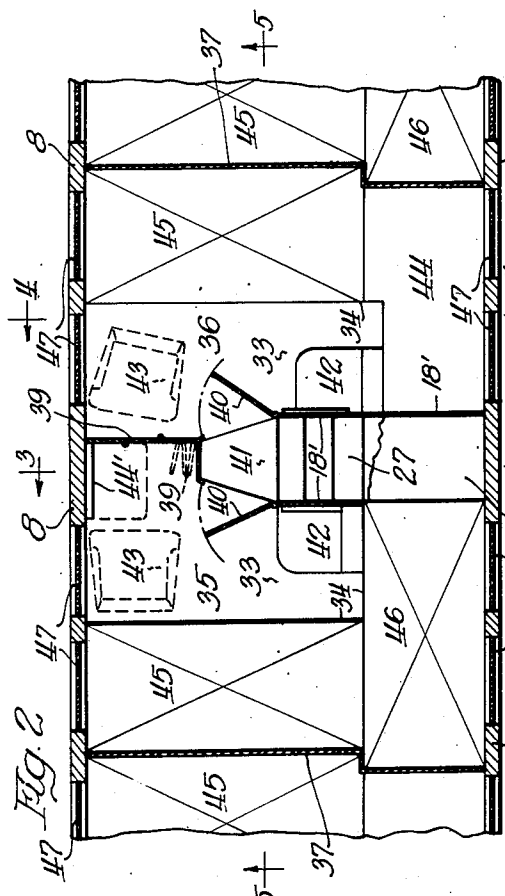
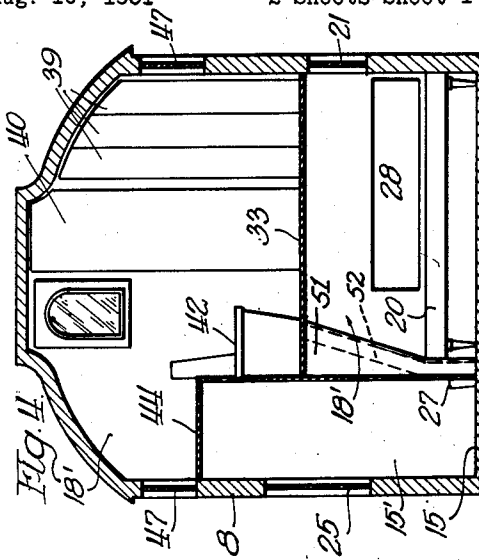
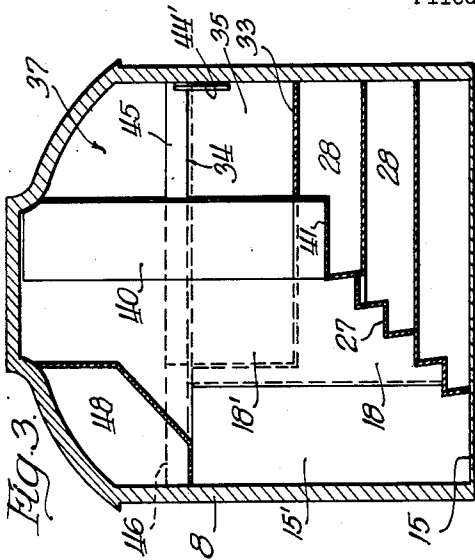
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SLEEPING CAR

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2 Sheets-Sheet 1



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# UNITED STATES PATENT OFFICE

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## SLEEPING CAR

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Application August 10, 1931, Serial No. 556,113.

12 Claims. (Cl. 105-315)

My invention relates to sleeping cars and its object is to provide an improved compartment car of the general type illustrated and described in my copending United States patent applications, Serial No. 349,976 and Serial No. 349,977, filed March 26, 1929. The objects of the present invention are to improve the arrangement for the comfort of the passengers, to improve the arrangement in the matter of structural features, and to provide an arrangement whereby a variety of accommodations, single room or rooms en suite, is made available, for passengers traveling alone or two, three or four passengers traveling together.

My present invention is illustrated in the accompanying drawings in which

Figure 1 is a partial plan view showing the arrangement of the lower deck of the car;

Figure 2 is a partial plan view of the upper deck, being in appropriate alignment with the corresponding plan of Figure 1, in order to facilitate reading of the drawings;

Figure 3 is a vertical cross sectional view taken on the plane of the line 3-3 of Figures 1 and 2;

Figure 4 is a vertical cross sectional view taken on the plane of the line 4-4 of Figures 1 and 2;

Figure 5 is a partial central longitudinal sectional view; and

Figure 6 is a partial elevational view of the car.

The body of the car is indicated at 8 and is divided into a series of compartments and an aisle as will now be described. The main floor deck is indicated at 15 and the compartments on that deck are the so called lower compartments. Running along one side of the car is the aisle 15', of small width relative to the width of the car. The lower compartments are indicated at 16 and 17. They are all of substantially the same size and are identical except that half of them are the complement of the other half, i. e., compartment 16 is the complement of compartment 17, and the next compartment to the right is the same as compartment 16, the length of the car thus comprising a series of pairs of compartments or double units. Between the compartments 16 and 17 of the pair shown in Figure 1, a structural compartment 18 is formed by the dividing walls 18', 18', this structural compartment providing a stair well and storage space as will be described presently. Between the pairs of compartments, i. e., between the compartment 17 of one pair and the compartment 16 of the adjoining pair, the cross dividing wall 19 may have in it a sliding partition 19' acting as a door to permit communication be-

tween these compartments. In each of these lower compartments, a bed 20 lies crosswise of the car against the dividing wall 18'. Each of these lower compartments has two windows 21, 21, one at the bed 20 and one at the floor space of the compartment, as shown. The floor space is ample for the installation of permanent toilet facilities 22, a folding table 23, and an unattached chair 24. The toilet devices 22 are preferably of the combination type known as chair hopper and folding washstand, in which the lower part is a water closet concealed in a chair and the upper part has a wash bowl mounted in the back of the chair, which is hinged so as to permit the wash bowl to be swung to a horizontal position for use and to a vertical position when not in use. The aisle side of the car is provided with windows 25, 25 and doors 26, 26 lead from the aisle into the respective compartments.

A stair 27 is provided in each of the stair wells 18, leading from the aisle to the upper deck, as will further appear presently. Under the stair 27 storage spaces 28 are provided, one conveniently accessible from the compartment on one side, and the other conveniently accessible from the compartment on the other. It will be noted that these storage spaces 28, 28 are in overlapping or offset relation, considered transversely of the car, with the intervening partition 28a defining one wall for one storage space and one wall for the other storage space.

Over each pair of lower rooms I provide a pair of upper rooms, as shown in Figure 2. The upper deck is of multiple-stage construction, having floor portions 33, 33 and bed portions 34, 34, the latter portions being higher than the former portions to the extent of the appropriate height of a bed. The floor portions 33 lie over the beds below, and the bed portions 34 lie over the floor portions below and the aisle. The result is that a person may stand comfortably wherever there is open floor space, or in the aisle, below and, at the same time, a person may stand comfortably wherever there is floor space above. The upper compartments are indicated at 35 and 36. They are substantially the same size and are substantially identical except that half of them are the complement of the other half, i. e., compartment 35 is substantially the complement of compartment 36, and the next compartment to the right is substantially the same as compartment 35, the length of the car thus comprising a series of pairs of compartments or double units. The upper pairs of compartments are separated by the dividing walls

37, 37 and the compartments of each pair are separated by the dividing walls 18', 18', as shown in Figure 2, and the dividing wall 39. This wall 39 is collapsible, as shown, so that it may be folded back to throw the two compartments of the pair into communication. Entrance to the compartments is gained by way of the doors 40, 40 leading from the landing 41 at the top of the stair 27. The upper compartments, as in the case of the lower compartments, are provided with toilet facilities 42 (also combination toilet units like those above described) and there is ample room for an unattached chair 43. The compartments 35 are provided with a folding table 44 which is available to the passengers in both chairs 43 when the collapsible wall 39 is folded back.

Each of the compartments 35 and 36 is provided with a bed 45 extending crosswise of the car against the wall 37, this bed extending from the car wall on one side, as shown, to a line approximately over the inner side of the aisle. The compartments 35 also have beds 46 lengthwise over the aisle. The portion 44 of the compartments 36 over the aisle, except for one which will be referred to presently, are too short for full length beds, in this arrangement, so that portion may be used either for a bed for a child or for storage purposes. The one exception referred to is in the end compartment 36 where, because there is no compartment 35 beyond, a full length bed may be provided on the portion 44 over the aisle.

The upper compartments are provided with windows 47, at both sides of the car. The arrangement is such that a space is left over the aisle in transverse alignment with the stair, this space being indicated at 48 and being available for storage purposes if so desired.

Referring to Figure 2, it will be noted that the combination toilet units 42 in the upper compartments 35 and 36 are disposed on opposite sides of each stair well 18, between the transverse beds 45 and the side walls 18' of said stair wells, and preferably against said side walls 18'. This relation of the combination toilet units 42 is of particular advantage because it leaves the floor space of each upper compartment 35, 36 entirely unobstructed adjacent to the side windows 47, whereby all of this floor space at the windows can be utilized for placing the unattached chair 43 in any desired position. Such relation of these combination toilet units also has the further advantage of disposing the supply and waste pipes where shut-off valves in the supply pipes are conveniently accessible and where the waste pipe clears certain structural parts of the car. Referring to Figure 4, it will be seen that a pipe chase 51 extends downwardly from each upper toilet unit 42, the waste pipe within said pipe chase being indicated in dotted lines at 52. As shown in Fig. 1, the two pipe chases 51 and their pipes 52 extend downwardly on opposite sides of each stair well 18, and in close proximity to the aisle 15'. The supply pipes and their shut-off valves may be accommodated in these pipe chases, whereby said valves can be made accessible from the aisle or from the stair well. It will be noted from Fig. 4 that the waste pipe 52 extends down through the lower floor of the car in immediate proximity to the aisle 15', which enables said waste pipe to clear the sill beam structure of the car frame. The fixed location of each toilet unit 42 in the position shown also enables the toilet unit to be used as a convenient step for getting into and out of the beds 45, 46 of the upper compartments.

No more than the standard length, width and

height of sleeping cars now in vogue is required, with the arrangement of my invention, to accommodate twenty-six adult passengers. For four passengers traveling together the two upper rooms at the end of the car will accommodate them en suite. For three passengers traveling together any other pair of upper rooms will accommodate them en suite. For two passengers traveling together either one of the two bed rooms on the upper deck will serve or two single rooms, en suite, below. Single passengers can travel in any one of the single rooms below or in any one of the one bed rooms above.

I claim:

1. In a sleeping car, a main floor and a multiple stage upper deck, an aisle and a series of compartments on said main floor, and a series of compartments on said upper deck each extending over said first named compartments and said aisle, wells arranged between pairs of said compartments on said main floor, a stair in said well leading to said compartments on said upper deck, beds transverse of the car in said compartments on said main floor, the upper stage of said upper deck extending the entire width of the car, beds transverse of the car in said upper compartments on said upper stage of the upper deck over the floor spaces of the compartments on said main floor, and beds in said compartments on said upper stage of the upper deck lengthwise of the car and over said aisle, said stair wells giving access to the transverse and longitudinal beds in said upper compartments through the lower stage of said upper deck.

2. In a sleeping car, a car body having a lengthwise partition forming an aisle on one side of the car, a series of transverse partitions forming a series of units, each unit comprising two compartments separated by a well, a door leading from each of said compartments in said lengthwise partition and doors in said transverse partitions opposite the partitions forming said well, a multiple stage upper deck having its top stage extending the entire width of the car, a stair in said well leading to said upper deck, beds in said compartments transverse of the car and against said transverse partitions forming said well, transverse partitions on said upper deck forming compartments in pairs on opposite sides of said well, beds in said upper compartments extending lengthwise of the car on said top stage of the upper deck, said stair affording access to said lengthwise beds in said upper compartments through the lower stage of said upper deck.

3. In a sleeping car, a body comprising a main floor divided into an aisle extending along one side of the body and a series of lower compartments between said aisle and the other side of the body, a multiple-stage upper deck roofing said lower compartments, upper stages of said upper deck extending the entire width of said car and overlying said aisle and the standing room spaces in said lower compartments, beds in said compartments, a plurality of said upper compartments each having a bed disposed transversely of the car and a bed disposed lengthwise of the car, said two beds lying on the top stage of said upper deck and extending across the entire width of the car, stair wells leading from said aisle to said upper deck at spaced intervals along the length of the car and affording access to the transverse and lengthwise beds of said upper compartments through the lower stage of said upper deck, each of said stair wells communi-

cating with a plurality of upper compartments, and toilet fixtures in a plurality of said upper compartments on opposite sides of a plurality of said stair wells.

5 4. In a sleeping car, a body comprising a main floor divided into an aisle extending along one side of the body and a series of lower compartments between said aisle and the other side of the body, beds in a plurality of said lower compartments, a multiple-stage upper deck roofing said lower compartments and divided into upper compartments, lower stages of said upper deck overlying portions of the beds in said lower compartments, the top stage of said deck extending the entire width of the car and overlying said aisle and the standing room spaces of said lower compartments, a plurality of stair wells each having a stair therein leading from said aisle to said upper deck at spaced intervals along the length of the car, each of said stair wells communicating with a plurality of said upper compartments, two beds in each of a plurality of said upper compartments; one disposed lengthwise of the car and the other transversely of the car, said two beds covering substantially the entire area of said top stage from side wall to side wall of the car, said stair wells affording access to the lengthwise and transverse beds in said upper compartments through the lower stage of said upper deck, and toilet fixtures in a plurality of said upper compartments disposed between the side walls of said stair wells and said transverse beds.

5 5. In a sleeping car, a body comprising a main floor divided into an aisle extending along one side of the body and a series of lower compartments between said aisle and the other side of the body, beds in a plurality of said lower compartments, a multiple-stage upper deck roofing said lower compartments and divided into upper compartments, lower stages of said upper deck overlying portions of the beds in said lower compartments, the top stage of said upper deck extending the entire width of the car and overlying said aisle and the standing room spaces of said lower compartments, beds in said upper compartments, a plurality of stair wells, each having a stair therein leading from said aisle to said upper deck, at spaced points along the length of the car, each of said stair wells communicating with a plurality of said upper compartments and affording access to the beds in said upper compartments through the lower stage of said upper deck, toilet fixtures in said upper compartments on opposite sides of said stair wells, said toilet fixtures being permanently located in said upper compartments and serving as steps for getting into and out of the beds in said upper compartments and pipe chases for pipes connecting with said upper toilet fixtures extending downwardly from said upper deck on opposite sides of said stair wells.

6 6. In a sleeping car, a car body having a lengthwise partition forming an aisle on one side of the car, a series of transverse partitions forming a series of lower compartments extending between said aisle and the other side of the car, a multiple stage upper deck, a stair well, means defining storage spaces for said lower compartments substantially in the transverse plane of said stair well, a stair in said well between two of said lower compartments and leading from said aisle to said upper deck, partitions defining upper compartments above said upper deck, the lower stage of said upper deck affording floors for said upper

compartments, two beds in each of a plurality of said upper compartments on the upper stage of said deck, one bed disposed lengthwise of the car and the other transversely of the car, toilet fixtures in said upper compartments, and a pipe connecting with one of said upper toilet fixtures and extending downwardly from said upper deck adjacent to said stair well and between said storage spaces and said lengthwise partition.

7 7. In a sleeping car, a body comprising a main floor divided into an aisle extending along one side of the body and a series of lower compartments between said aisle and the other side of the body, beds in a plurality of said lower compartments, a multiple-stage upper deck roofing said lower compartments and divided into upper compartments, lower stages of said upper deck affording floors for said upper compartments and overlying portions of said beds in said lower compartments, and upper stages of said upper deck overlying standing room spaces in said lower compartments, a stair well extending from said aisle to said upper deck, beds in a plurality of said upper compartments on upper stages of said upper deck extending lengthwise of the car and transversely of the car, said stair well affording access to said beds in the upper compartments through the lower stage of said upper deck, and means defining storage spaces individual to each of two adjacent lower compartments, with said storage spaces disposed substantially in the transverse plane of said stair well.

8 8. In a sleeping car, a body comprising a main floor divided into an aisle extending along one side of the body and a series of lower compartments between said aisle and the other side of the body, a multiple-stage upper deck roofing said lower compartments and divided into upper compartments, upper stages of said upper deck overlying standing room spaces of said lower compartments, two beds in each of a plurality of said upper compartments on the upper stage of said deck, one extending lengthwise of the car and the other transversely of the car, a stair well between two of said lower compartments and extending from said aisle to said upper deck and affording access to the beds in said upper compartments through the lower stage of said upper deck, and means defining storage spaces for said two lower compartments beneath one of the lower stages of said upper deck and substantially in the transverse plane of said stair well.

9 9. In a sleeping car, a body comprising a main floor divided into an aisle extending along one side of the body and a series of lower compartments between said aisle and the other side of the body, a multiple-stage upper deck roofing said lower compartments and divided into upper compartments, upper stages of said upper deck overlying standing room spaces of said lower compartments, beds in said upper compartments extending longitudinally of the car and extending transversely of the car, a stair well leading from said aisle to said upper deck and affording access to said upper compartments through the lower stage of said upper deck, means defining storage spaces under one of the lower stages of said upper deck and substantially in the transverse zone of said stair well, and beds in two of said lower compartments transversely of the car and lying adjacent to said storage spaces.

10 10. In a sleeping car, a body comprising a main floor divided into an aisle extending along one side of the body and a series of lower compartments between said aisle and the other side of

the body, beds in a plurality of said lower compartments, a multiple-stage upper deck roofing said lower compartments and divided into upper compartments, lower stages of said deck overlying portions of the beds in said lower compartments and upper stages thereof overlying standing room spaces of said lower compartments, beds in a plurality of said upper compartments extending longitudinally of the car and transversely of the car, a plurality of stair wells each having a stair therein leading to said upper deck and affording access to the beds in said upper compartments through the lower stage of said upper deck, toilet fixtures in a plurality of said upper compartments, and pipe chases for pipes connecting with said toilet fixtures and extending downwardly from said upper deck, said toilet fixtures and said pipe chases being disposed adjacent to said aisle.

11. In a sleeping car, a body comprising a main floor divided into an aisle extending along one side of the body and a series of lower compartments between said aisle and the other side of the body, a multiple-stage upper deck roofing said lower compartments, upper stages of said upper deck extending substantially the full width of the car and overlying standing room spaces in said lower compartments, beds in a plurality of said upper compartments extending lengthwise and transversely of the car, stair wells leading from said aisles to said upper deck at spaced intervals along the length of the car, each of said stair wells communicating with a plurality of upper compartments and affording access to the lengthwise and transverse beds in said upper compartments through the lower stage of said upper deck, and toilet fixtures in a plurality of said upper compartments on opposite sides of a plurality of said stair wells and between said stair wells and said transverse beds.

12. In a sleeping car, a body comprising a main floor, a near side wall and a far side wall, a multiple stage upper deck and a roof, a lengthwise partition adjacent to said near side wall defining an aisle extending along only one side of the car, said lengthwise partition extending vertically from said main floor to an upper stage of said

upper deck, main floor partitions extending transversely from said lengthwise partition to said far side wall and defining a plurality of lower compartments, said main floor partitions comprising solid partitions and communicating partitions, beds in said lower compartments adjacent to said solid partitions, doors in said communicating partitions establishing communication between adjacent compartments, toilet fixtures in said lower compartments substantially abutting said communicating partitions on opposite sides thereof and substantially against said lengthwise partition, windows in said far wall opening into said lower compartments, the floor space in each of said lower compartments including window sitting space adapted to accommodate a movable chair at the window, lower stages of said upper deck overlying portions of the beds in said lower compartments and upper stages thereof overlying standing room spaces of said lower compartments, upper deck partitions extending transversely from side wall to side wall of the car and defining a plurality of upper compartments, said upper deck partitions comprising solid partitions and communicating partitions, doors in said communicating partitions establishing communication between adjacent upper compartments, the top stages of said upper deck in a plurality of said upper compartments defining bed supporting surfaces extending the entire width of the car, beds in said latter compartments covering said top stage from side wall to side wall of the car, said beds including beds extending transversely of the car and beds extending lengthwise of the car, stair wells leading from said aisle to said upper compartments and affording access to the transverse and lengthwise beds in said upper compartments through the lower stage of said upper deck, toilet fixtures in said upper compartments between said stair wells and said transverse beds and substantially abutting said lengthwise partition, and windows in said far wall opening into said upper compartments, the floor space in each of said upper compartments including window sitting space adapted to accommodate a movable chair at the window.

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