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COMPARTMENT ARRANGEMENT FOR VEHICLES, ESPECIALLY FOR RAILWAY SLEEPING CARS

Filed May 21, 1953

3 Sheets-Sheet 2

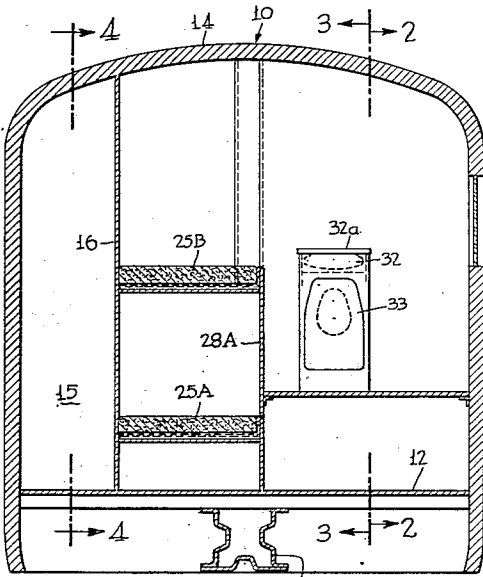


FIG. 5

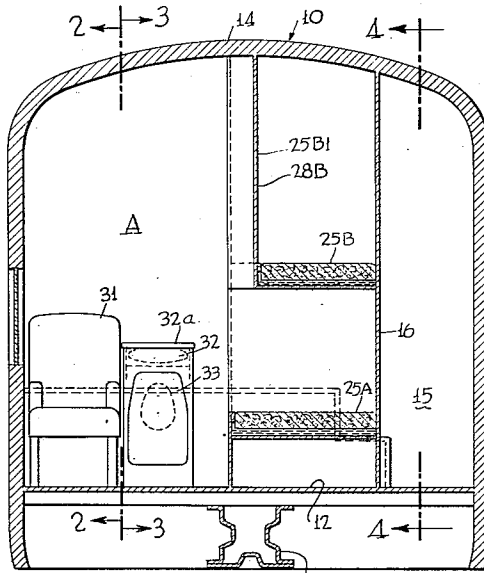


FIG. 6

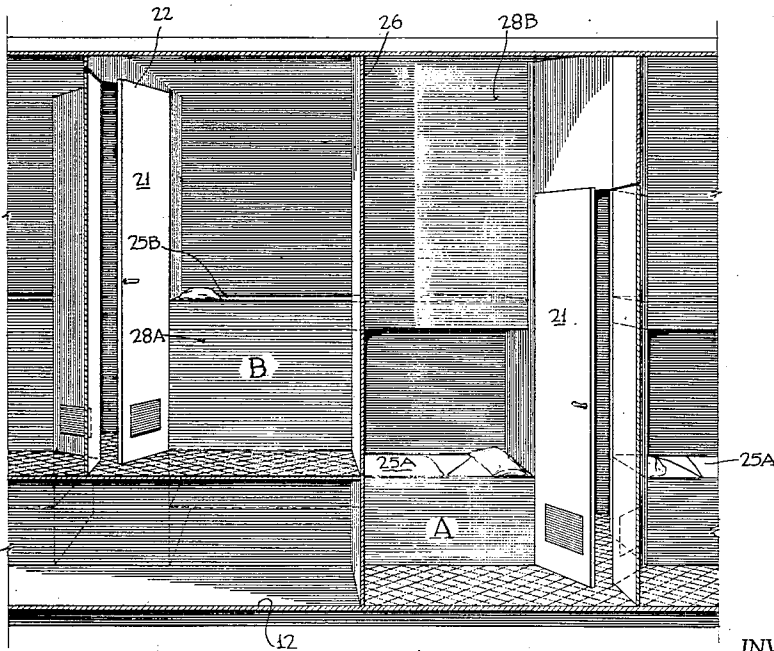


FIG. 7

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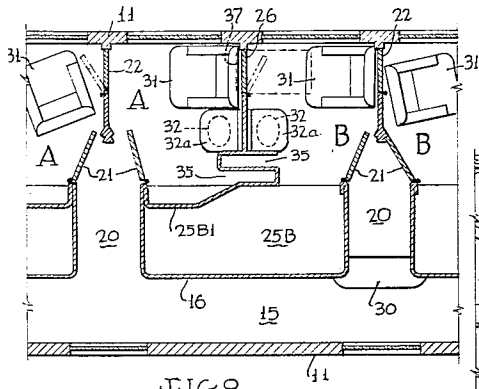


FIG. 8

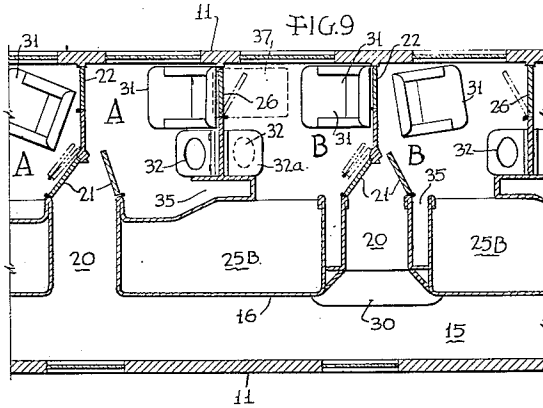


FIG. 9

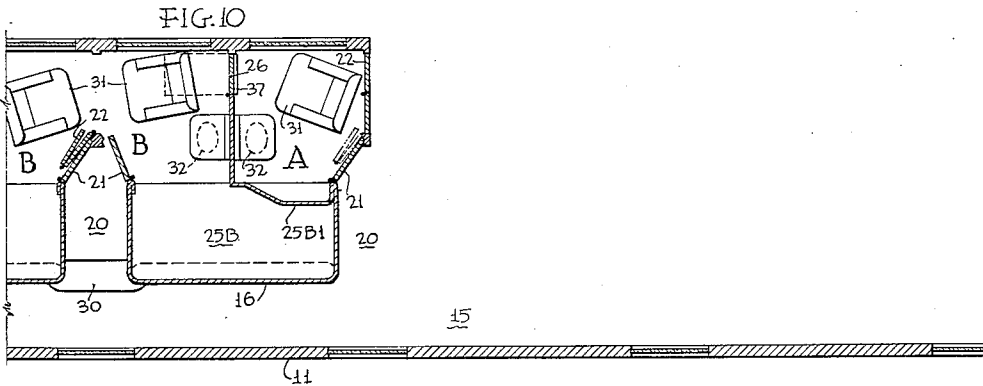


FIG. 10

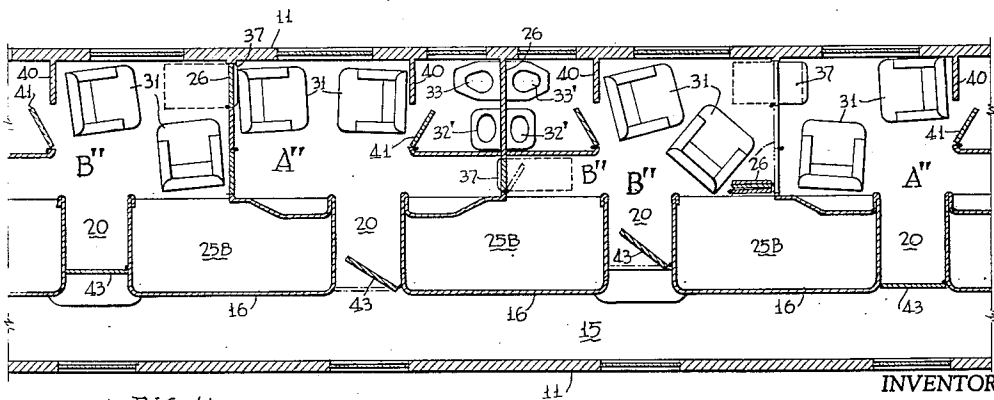


FIG. 11

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**COMPARTMENT ARRANGEMENT FOR VEHICLES, ESPECIALLY FOR RAILWAY SLEEPING CARS**

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11 Claims. (Cl. 105—315)

This invention relates to compartment arrangements for vehicles, especially for railway sleeping cars, and has for an object the provision of improvements in this art.

One of the particular objects of the invention is to provide compartments which have ample living space and beds or berths which are always usable and which, if desired, may be permanently left in the use position apart from sitting and living space which is always available.

Another object is to provide beds which are longitudinally arranged in the vehicle and which are disposed near the medial vertical longitudinal plane of the vehicle so as to minimize rolling which increases with the distance from the central vertical longitudinal axis of turning movement of the body of the car, whereby to provide the greatest possible comfort for sleeping accommodations.

Another object is to provide beds in superposed or tiered relationship so as to conserve space in the vehicle as much as possible.

Another object is to arrange compartments in pairs or groups on the same floor level so they may be readily converted into a suite.

Another object is to provide toilet facilities which are always available; and also to provide ample wardrobe and storage space.

The above and other objects and various features of novelty will be better understood from the following description of certain illustrative embodiments of the invention, reference being made to the accompanying drawings thereof, wherein:

Fig. 1 is a horizontal plan view through a railway car having compartments arranged according to the present invention, the view being taken on the line 1—1 of Figs. 2 and 3;

Fig. 2 is a longitudinal vertical section taken on the line 2—2 of Figs. 1, 5 and 6;

Fig. 3 is a longitudinal vertical section taken on the same plane as Fig. 2 but looking in the opposite direction, the section being indicated by the line 3—3 of Figs. 1, 5 and 6;

Fig. 4 is a longitudinal vertical section taken on the line 4—4 of Figs. 1, 5 and 6;

Fig. 5 is a transverse vertical section taken on the line 5—5 of Fig. 1;

Fig. 6 is a transverse vertical section taken on the line 6—6 of Fig. 1;

Fig. 7 is a vertical perspective view of the area indicated by broken lines and taken on the line 7—7 of Fig. 1;

Fig. 8 is a plan view of a modified arrangement;

Fig. 9 is a plan view of another modified arrangement;

Fig. 10 is a plan view of another slightly modified arrangement; and

Fig. 11 is a plan view of another modified arrangement.

Referring first to Figs. 1-7 of the drawings, the compartment arrangement is shown as being embodied in a

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rail car 10 having side walls 11, a floor 12, a center sill 13, a roof 14, an aisle 15, and an aisle wall 16.

The compartments are arranged in pairs, each pair being on the same floor level. All pairs may be arranged on a single floor level or some pairs may be arranged on a lower level and some pairs on an upper level. The latter arrangement is shown in Figs. 1-7. Another unit grouping consists of two compartments having in common a pair of vertically superposed beds, the lower serving one compartment and the upper serving the other compartment. The compartments which are arranged on a lower floor level, as on the aisle floor level, are designated by the reference character A, and the compartments which are arranged on a higher floor level are designated by the reference character B.

A transverse passageway 20 leads from the aisle 15 to a pair of compartments A, A or B, B having floors on a common level. Doorways having closures or doors 21 lead from each passageway 20 to the compartments. A folding partition 22 is arranged between the paired compartments on a common floor level so the compartments may be separated or thrown together as a suite. The doors may hinge at either edge and the partition may fold either toward the doorways or toward the car side-wall. Herein the doors 21 are shown to be hinged on the aisle side and the partitions are shown to fold toward the doors, the partition covering one of the adjacent doors and leaving the other available for use conjointly for the two compartments which have been thrown together.

Between the transverse passageways 20, in the longitudinal direction, and between the aisle 15 and the compartment space, in the transverse direction, there are provided superposed or tiered beds or berths, 25A, lower, and 25B, upper. These beds may be associated with the compartments in various ways, depending on the compartment arrangement and type of accommodations desired. If all the compartments are on the aisle level and designed for single occupancy, the lower bed 25A will be at normal or sitting height from the floor for one compartment, while the other bed 25B will be at the upper bed level for the other compartment. The compartments served by a pair of superposed beds, in the first form, are separated by a partition 26, which may be a fixed permanent partition or which may be foldable, at least in part, to provide access between compartments. If the other partition 22 is foldable, the partition 26 will normally not be foldable but may be. Figs. 1-7 show both partitions 22 and 26 to be foldable.

When the superposed beds serve adjacent compartments having an intermediate dividing partition 26, the foot end portion of each will be separated from the non-using compartment by a partitioning enclosure or boot which is designated 28A for the lower bed and 28B for the upper bed. Each bed is open at the compartment side for half its length or more from the head end for access from the compartment it is intended to serve. The bed ends are enclosed by permanent structural walls, either the walls defining the sides of the transverse passageways or walls parallel thereto.

Preferably the upper bed 25B and the boot 28B therefor, when provided, are cut away at the foot end, as at 25B1, to provide head room for an occupant sitting on the edge of the lower bed.

While, as stated, all compartments may be on one floor level, this arrangement places the upper bed at such an elevation that a ladder is necessary to provide access to it; and it is preferable to arrange the compartment served by the upper bed at a higher-than-aisle level so that the bed may be at an acceptable sitting height above the compartment floor. The upper compartments are arranged in pairs served by a transverse passageway 20

and this passageway is provided with stairs generally designated by the numeral 30. The length of this transverse passageway provides space for stairs having treads which are sufficiently wide between risers to furnish safe footing when travelling up or down.

Each compartment is provided with a comfortable backed seat or chair 31 which preferably is movable so that it may be placed in different locations, as for single occupancy or for use of the room as a suite. If room size permits there may be more than one chair in it. Chairs may be of the foldable type. A basin 32 and a toilet 33 are also provided for each compartment. They may be placed back-to-back at the partition 26. One or both may be of the folding type, as in the well known "Cambolet" unit; or the toilet may fold and the basin remain open as a fixture, as shown. The basin shown has a folding cover 32a.

As slight modifications, shown in Figs. 8 and 9, wardrobes 35 may be provided for the compartments. If space permits, one wardrobe for each or both of a pair of compartments using the same bed tier, may be arranged at the ends of the beds, as shown in Fig. 9; and when length is at a premium they may be placed between the beds and the toilets, as shown in Fig. 8. The wardrobe for the lower compartment does not extend upward far enough to narrow the entrance space to the bed of the upper compartment; and the wardrobe for the upper compartment does not extend down into the lower compartment.

Beneath the beds there are provided shoe exchange boxes 36 having outside access doors (not shown) and inside access doors 36a.

The basic arrangement, shown in Figs. 1 to 9, is readily susceptible to a wide range of modifications to adapt it for different types of room occupancy without loss of available car space. For example, it has already been explained how the partition 26 may be folded up or removed to make a suite of two rooms for double or multiple occupancy. It was stated that when this was done the partition 22 would normally be left closed; but of course if larger connected space is desired, the partition on both sides of a compartment could be left open. Indeed all partitions could be opened to place all compartments of a car together, an arrangement which might be highly desirable for daytime occupancy when groups are traveling together. It will be assumed usually that all rooms which are thrown together will be on a common floor level; also that when basins and toilets are arranged at the partition 26, only the parts of the partition above and at the sides of these fixtures will be folded up. In the floor plan arrangement shown in Figs. 1 to 7 this will provide passage between rooms if they should be disposed on the same floor level. If the rooms are not on the same floor level (as shown in Figs. 1-7) and are thrown together by removing parts of the partition 26 it will be necessary to provide a step 37 between them. This may be a folding step, or a loose stool placed in the room, or a fixed step, depending on other room requirements.

When the space normally taken by a pair of rooms is intended for permanent double or multiple occupancy it is not necessary to have two basins and two toilets, as illustrated for the first embodiment; and the whole partition 26 and appurtenances may be eliminated and a single toilet enclosure 40 substituted, as shown in Fig. 11. The toilet 33' and basin 32' are arranged in this enclosure. The enclosure has a door 41. The double room fits into the regular scheme of singles on one or both ends.

Fig. 11 shows a two-level room arrangement in which two beds are available for one room, both beds being at sitting level. Here the transverse passages form center entrances which may be closed by doors 43 near the aisle wall, leaving the transverse passages wholly or partly enclosed with the rooms A'' or B''.

While upper and lower beds may be fixed, the ar-

range is such that they may be stowed. As an example they may be hinged at the long edge so as to fold up against the aisle wall, as shown in Fig. 10. This gives more free floor space for daytime use. The space served by a lower bed may not have sufficient height for standing but it is useful for sitting when a chair is placed in the former bed space. The folded bed position is indicated by broken lines in Fig. 10.

It will now be seen that the simplest arrangement, shown in Figs. 1 to 7, provides very comfortable accommodations for one person in a room. There is a bed at the aisle wall near the central vertical plane of the car where side rocking movement is the least; also the bed is arranged longitudinally of the car, which is generally considered the preferred arrangement. Further, each bed is at a convenient sitting height from the floor. While part of each bed is enclosed in a boot, the space in the boot is so wide and high that there is no feeling of confinement in using the bed. The bed is full length and always available for use. There is a chair which may be moved about as desired and there is ample floor space for more than one chair. The space at a window is always available for the chair, facing in either direction. The toilet and basin are always available whether the bed or chair is being used; and the toilet or basin or both, depending on the type of fixture being used, may be folded up out of the way. Either the partition at the entrance passage or the intermediate partition, or both, may be folded to provide passage between compartments and a clear view at eye level, when sitting or standing, along the length of the car. For daytime travel this can do much to eliminate the feeling of confinement.

The arrangement of Fig. 8 is the same as that of Figs. 1 to 7 except that wardrobes or lockers have been provided at the intermediate wall alongside the beds. There is space between the toilet facilities and the beds for these wardrobes. They lengthen the bed enclosures slightly but by leaving out the wall of the wardrobe adjacent the lower bed the access both to bed and wardrobe is facilitated. In the first form there is ample wall space to provide hooks for hanging clothes and, of course there is still much wall space for clothes hooks in the Fig. 8 form. Below the floor level of the B room the wardrobe is not useful, hence the wardrobe for room A may be made full width below the upper floor level. Likewise, the lower wardrobe is not particularly useful above the height of the upper bed level, hence the wardrobe for room B may be made full width above the level of the bed therein.

In Fig. 9 a wardrobe or locker is placed at the end of a set of tiered beds and another is provided at the intermediate wall. If length in the car permits there may be a wardrobe at each end of a tiered bed set. It probably may not be considered advisable to increase the unit length merely to add wardrobe space but when the additional length is available the bed-end wardrobes may be provided. Of course, the additional length could as well be used to provide extra bed length for extra tall passengers. The point to be noted is that when the beds are arranged longitudinally, as shown here, there is no inescapable restriction on the use of the space as there is when the beds are arranged transversely.

The double arrangement of Fig. 11 provides a toilet enclosure and sitting height beds for two persons. Folding partitions between rooms are feasible with this arrangement, especially with toilet enclosures placed at opposite ends of alternate adjacent rooms of different levels, as illustrated.

It is thus seen that the invention provides improved compartment arrangements of a very desirable nature and such as are susceptible to a very wide range of modification upon a common basic design and floor plan.

While certain embodiments have been shown by way of illustration it is to be understood that there may be

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other embodiments within the general scope of the invention.

What is claimed is:

1. In a vehicle, such as a railway sleeping car, having longitudinal side walls and a longitudinal side aisle wall, transverse partition wall means forming a plurality of compartments between a side wall and the aisle wall, sets of superposed or tiered longitudinal beds arranged within the compartment space at the aisle wall, some of said tiered bed sets being spaced apart longitudinally from others and having spaced transverse end walls to provide between them transverse passageways from the aisle to the compartments, closure means at said passageways between the aisle and compartments, and toilet facilities in each compartment, said transverse partition wall means including a medial partition intermediate the length of a set of tiered beds and boots enclosing part of each bed with the compartment which it serves and separating the enclosed bed part from adjacent space, the toilet facilities being arranged at said medial partition.

2. In a vehicle, such as a railway sleeping car, having longitudinal side walls and a longitudinal side aisle wall, transverse partition wall means forming a plurality of compartments between a side wall and the aisle wall, sets of superposed or tiered longitudinal beds arranged within the compartment space at the aisle wall, some of said tiered bed sets being spaced apart longitudinally from others and having spaced transverse end walls to provide between them transverse passageways from the aisle to the compartments, closure means at said passageways between the aisle and compartments, and toilet facilities in each compartment, said transverse partition wall means including a medial partition intermediate the length of a set of tiered beds and boots enclosing part of each bed with the compartment which it serves and separating the enclosed bed part from adjacent space, the toilet facilities being arranged at said medial partition, the medial partition including a movable part at one side of the toilet facilities providing passageway between compartments.

3. In a vehicle, such as a railway sleeping car, having longitudinal side walls and a longitudinal side aisle wall, transverse partition wall means forming a plurality of compartments between a side wall and the aisle wall, sets of superposed or tiered longitudinal beds arranged within the compartment space at the aisle wall, some of said tiered bed sets being spaced apart longitudinally from others and having spaced transverse end walls to provide between them transverse passageways from the aisle to the compartments, closure means at said passageways between the aisle and compartments, and toilet facilities in each compartment, said transverse partition wall means including a medial partition intermediate the length of a set of tiered beds and boots enclosing part of each bed with the compartment which it serves and separating the enclosed bed part from adjacent space, the toilet facilities being arranged at said medial partition, the boot for the end of an upper bed being cut out on the side to provide head room for an occupant sitting on the lower bed.

4. In a vehicle, such as a railway sleeping car having longitudinal side walls, a longitudinal aisle wall, a floor,

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and a roof, the combination therewith of a set of superposed or tiered upper and lower longitudinal beds arranged along said aisle wall, transverse partition means between the bed side of said aisle wall and an outer wall forming compartments at said beds, said transverse partition means including a medial transverse partition extending outward from the mid-length of said beds, floors at lower and upper levels respectively for the compartments on opposite sides of said medial partition, enclosure means separating the lower-floor compartment from the space above the upper bed at one end while allowing access to the lower bed at that end, other enclosure means separating the upper-floor compartment from the space between beds at the other end while allowing access to the upper bed at that end, means providing access passage to said compartments from the aisle at the ends of the beds, and closure means for separating said compartment spaces from the aisle space.

5. The combination as set forth in claim 4, which further includes in combination, toilet facilities at said medial partition.

6. The combination as set forth in claim 4, which further includes in combination, means providing an access opening between compartments in said medial partition, a closure for said opening, and steps at the opening.

7. The combination as set forth in claim 4, which further includes in combination, a wardrobe for at least one of said compartments at said medial partition.

8. The combination as set forth in claim 4, which further includes in combination, a second set of longitudinal tiered beds at the aisle wall spaced from the first set to leave a vestibule-like passage from the aisle to the compartment space.

9. The combination as set forth in claim 4, which includes in combination, two other sets of longitudinal tiered beds at the aisle wall spaced from the first set to leave vestibule-like passages from the aisle to the compartment space, one of said passages having steps leading to the compartment space.

10. The combination as set forth in claim 9, which is further characterized by the fact that toilet enclosures are provided at opposite sides of the medial partition of the middle set of beds and that two beds at a common level are enclosed with each compartment served by one of said toilet enclosures.

11. The combination as set forth in claim 9, which is further characterized by the fact that at each bed set there is a medial partition, the space between bed sets being left without a partition to leave the full space at a given level in one compartment which is served by two beds at a common level.

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