P. PARKE
RAILWAY SLEEPING CAR
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Fig. 2

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This invention relates to railway sleeping cars of the type providing private rooms for the individual accommodation of one or more passengers. Specifically, the invention relates to that type of accommodation known as a Pullman "compartment" having a lower and an upper berth with private toilet facilities; and it is the primary object of the invention to improve such accommodations by the disposition of upper and lower convertible beds at right angles to each other and in relation to the other facilities of the compartment including concealed toilet fixtures, luggage space, washstand, etc., whereby either occupant may have free access to his bed or any of the other facilities of the room, including the entrance and exit door and a communicating door between adjoining rooms, without disturbing the other passenger.

A further object of the invention is the provision of greater usable space in compartment accommodations by the disposition of the various facilities thereof, whereby a movable chair may be utilized to advantage.

Other and more specific objects of the invention will become apparent from the following description read in conjunction with the accompanying drawings, in which—

Fig. 1 is a perspective view of a railway car equipped with a compartment constructed in accordance with this invention and having portions broken away better to show the various facilities made up for daytime use;

Fig. 2 is a perspective view of the compartment and having portions broken away to show the various facilities ready for nighttime occupancy;

Fig. 3 is a cross-sectional view through the compartment looking in the direction of the partition containing the communicating door to an adjoining room and showing the folding washstand and enclosed hopper and showing the upper berth in lowered position.

Fig. 4 is a cross-sectional view through the compartment looking in the direction of the convertible sofa-bed and showing the upper berth in raised position.

Fig. 5 is a longitudinal, sectional view through the compartment looking toward the side wall and showing the convertible sofa-bed made ready for daytime use;

Fig. 6 is a longitudinal, sectional view through the compartment looking in the direction of the aisle partition and showing the entrance door flanked by the folding washstand and enclosed hopper on one side and by the wardrobe and convertible sofa-bed, made ready for night occupancy, on the other; and

Figs. 7 and 8 are detail views of the sofa backrest pivot arrangement illustrating its method of operation.

In the drawings, 10 represents a railway car having an aisle 11 and a compartment 12. The compartment is formed by partitions 13 and 14, aisle partition 15 and side wall 16; and it will be noted that each of such partitions and walls extends in a single plane, wherefore it may be said that the compartment is formed by rectilinear walls. Ceilings 17, in the compartment, and 18, in the aisle, provide a roof zone above the compartment and aisle, respectively, for a purpose hereinafter to be described. An entrance door 19 in the aisle partition 15 provides access to the compartment from the aisle, and a full-length mirror 20 on the inner side of the door adds to the convenience of the occupants of the room in preparing their toilet. A communicating door 21 in the partition 14 permits of the use of adjoining compartments or rooms en suite, where desired, and a mirror 22 is provided thereon which may be duplicated upon opposite sides thereof.

Between the doors 19 and 21 and disposed adjacent the aisle partition 15 and partition 14 in the corner formed thereby is a cabinet 23 enclosing all of the toilet facilities including a medicine cabinet 23, a folding washstand 24, and an enclosure 25 housing the hopper 26. The medicine cabinet is provided with a hinged door 27, having a mirror 28, and contains interior shelves 29 for the accommodation of toilet articles. An exterior shelf 30 provides for the accommodation of toilet articles while the mirror 28 is being used. The folding washstand is hinged at 31 and comprises a basin 33 enclosed by and supported in the housing 24 which conforms to the surface contour of the cabinet 32 into which it is received when folded. The washstand is operated by means of a handhold 34. The washbasin 33 empties, automatically, into a drain 37 leading beneath the car as the washstand is closed after use. Stationary pipes and faucets 38 supply hot and cold water in the usual manner. The enclosure 25 houses the hopper 26, concealing it from view, and is provided with a hinged hopper seat 35 which is covered by a hinged, upholstered seat 36.

The entrance door 19 is flanked on the one side by the cabinet 33 and on the opposite side by a wardrobe 45 for the accommodation of clothing or the like. Access is had to the wardrobe.
by means of hinged door 46. A shoe locker 42 is disposed below the wardrobe 45 and is provided with door 43 opening into the room and door 44 opening into the aisle 11.

A baggage shelf 43 extends between the partitions 13 and 14 along the aisle partition 15 above the wardrobe 46 and cabinet 32 and also extends partway along the partition 14, as is shown in Figs. 1, 3 and 6, and provides means for getting the baggage out of otherwise usable areas.

Extending between the wardrobe 45 and side wall 16 a convertible sofa-bed 47 is disposed along the partition 12. The sofa-bed comprises the seat 48 and the convertible backrest 50 and takes the place of the customary lower berth arrangement heretofore used. The seat 49 is supported at opposite ends on the heater pipe cover support angle 51 at the side wall position and on the seat support angle 52 at the wardrobe 45. The seat is held in fixed position by means of knobs or vertically extending lug members (not shown) screwed into the top surfaces of the angles 51 and 52 and entering holes in the bottom of the seat frame. The backrest 50 is convertible from the normally upright back-supporthing position indicated in Figs. 1, 4 and 5 to the horizontal, inverted bed position indicated in Figs. 2 and 6.

The backrest in the vertical position is supported at each end in heart-shaped double-pivot slides 53 which function in a novel manner to permit pivoting of the backrest thereabout to the horizontal position without leaving a gaping opening between the edge of the lowered backrest and the partition 13, whereby the space thus saved is realized in the additional floor area thereby obtained. The double-pivot slides are rigidly mounted respectively on the side wall 16 and the face of the wardrobe 45 by flush-type fastening means and in position to co-operate with and be engaged by double-pivot plate members 54 rigidly attached to respectively opposite ends of the backrest 50. The double-pivot slides 53 are each provided with a continuous V-shaped track 55 defined by flanges 56, each leg of the V being swung on an arc from the terminus of the respectively opposite leg. The V-shaped track is disposed horizontally with the respective terminus of the V disposed over and under, one with respect to the other—i.e., with the V turned on its side and with the vertex directed to the rear in relation to the backrest 50. The double-pivot slides 53 are each adapted to swing thereafterfrom the closed position against ceiling 57, as indicated in Figs. 1 and 4, to the open position indicated in Figs. 2 and 3, where it is supported by the usual upper berth, spiral-spring-tension devices 58 connected to the free edge of the backrest by means of flexible chains 59.

The sponge is held in the full-open position by automatically operating, spring-actuated catches 54 mounted in the partitions 13 and 14 in position to engage with co-operating members on the respective ends of the backrest. The catches 54 are released when it is desired to raise the sponge by means of plungers (not shown) concealed within the sponge and projected by means of operating handle 65 in the face of the backrest 50. The catches 54 are provided in an intermediate position of the backrest, which may be utilized to get the sponge out of the path of movement of occupants of the compartment after its use and before it is made up by a porter. The sponge is provided, at its outer edge, with a guard rail 66. In the open position of the backrest, serves as a means of connecting stepladder 67 to the side of the bed and the partition 13 in the lowered position, as would be the case in the event a single pivot point were used, and more floor area in the room is thereby obtained. The closely adjacent position of the bed in the lowered position to the partition 13 is best shown in Fig. 6.

It will be noted that the top flange of the upper leg of each of the V-shaped tracks is cut away, at 52 in order that the backrest 50 may be put in place and removed without the necessity for removing any of the attaching screws in either of the members 53 or 54. In the normally upright position, as at 52, and is retained by gravity-actuated, simple latch members 63 disposed adjacent the opposite ends of the backrest and engaging co-operative members thereon. In the lowered, horizontal position, the backrest is supported upon folding beds 64 in the face of the wardrobe 45 and the side wall 16 and which, in the upright position of the backrest, may be folded flush with such walls. A mattress and bedding retaining plate 65 is hinged at 66 to the inner side wall of the mattress pocket 67 of the partition 13 in the conventional position to ride up and down on wearing strips or rails 68 on the partition 13 as the backrest is raised and lowered from the horizontal to a vertical position, and vice versa. Rollers 69, on the free edge of the plate 65, engage the rails 68 to provide anti-friction bearings therebetween. It will be seen that the plate 65, by closing the gap between the edge of the bed and the partition 13, will serve to keep the mattress 70 and bedding in the pocket 67.

The outer side wall of the mattress pocket is provided with a cushioned edge 71 to prevent bodily contact with the otherwise unfurred edge of the rail. In the upright position of the backrest 50, folding armrests 72 are available for the convenience of seated occupants. Table-supporting brackets 73 are disposed on the side wall 16 beneath the window 74 in position to receive a portable table (not shown) for the use of occupants of the seat 49. An ash tray 75 is also disposed on the side wall 16 convenient for use from the seat 49

Disposed above and at right angles to the sofa-bed 47 at the side wall position over the window 74 is a foldable upper berth, or bunk, 80. The bunk is pivotally mounted at opposite ends in partitions 13 and 14 adjacent the side wall 16, and is adapted to swing thereafter from the closed position against ceiling 57, as indicated in Figs. 1 and 4, to the full-open, nighttime position indicated in Figs. 2 and 3, where it is supported by the usual upper berth, spiral-spring-tension devices 77 connected to the free edge of the bunk by means of flexible chains 78. The bunk is held in the full-open position by automatically operating, spring-actuated catches 84 mounted in the partitions 13 and 14 in position to engage with co-operating members on the respective ends of the bunk. The catches 84 are released when it is desired to raise the bunk by means of plungers (not shown) concealed within the bunk and projected by means of operating handle 85 in the face of the bunk 80. The catches 84 are provided in an intermediate position of the bunk, which may be utilized to get the bunk out of the path of movement of occupants of the compartment after its use and before it is made up by a porter. The bunk is provided, at its outer edge, with a guard rail 86. In the open position of the bunk, serves as a means of connecting stepladder 87.
therewith to permit easy access to the bunk. The ladder is stored in the bunk when not in use during the daytime.

The guard rail 86 serves further as a bottom means of attachment for spaced safety webbing guards 87 which are supported by means of rod 90 carried by arms 89 pivoted to the partitions 13 and 14 at 91 and foldable from the open supporting position, shown in Fig. 3, to the collapsed condition in the closed position of the bunk 80, indicated in Fig. 4. In their open position, the arms 88 and the rod 90 are supported by straps 92 secured to the ceiling inside the closed bunk area and, in turn, support the spaced webbing guards in position to prevent an occupant from falling off the bunk. The ladder 87 engages the rail 86 in the space between the webbing guards for entrance to the bunk therewith, and an assist cord 93, looped over the rod 90, aids in such entrance. The mattress 94 and other bedding are stored in the closed bunk when not in use. Windows 95 are disposed in the side wall 16 in the area of the upper berth for the use of the occupant of that space.

By the disposition of the bunk 80 above and at a right angle to the sofa-bed 41, greater spaciousness is given the compartment accommodation without increase in overall size of the room, and by the use of either occupant is readily had to the toilet facilities, or to either of the doors 19 or 21 or the respective beds, without disturbing the other occupant. Further, room is provided, not otherwise available, for a movable chair 95 which, when not in use, may be kept in the space beneath the bunk or used for lounging or reading at night when the beds are made up. The utility of the arrangement is readily apparent from an inspection of Figs. 1 and 2, wherein it will be seen that the full, open floor area of the room is available at all times, and the occupant of the lower sofa-bed does not have the confining influence of an overhanging upper berth directly overhead, whereby a room of given size is seemingly made more spacious by these two features alone; and by the disposition of the wardrobe at the aisle-adjacent end of the sofa-bed and the toilet facilities in the corner between the doors, no otherwise useful floor area is taken up, and, at the same time, such facilities are rendered most convenient for use.

While only one compartment 12 has been illustrated and described, it will of course be understood that one or a plurality of such compartments may be incorporated in a single vehicle and for use en suite with like or other accommodations or singly.

The roof zone space above the aisle ceiling 18 is utilized for the accommodation of conditioned air duct 100 which opens, through outlet 101, into a pressure chamber 102 having an extended, perforated outlet surface 106 for admission and even distribution of fresh air to the compartment. Outlet grille 104, disposed in the lowered panel of entrance door 15, provides for recirculation of the air through the aisle area 11—the air withdrawn from the compartment through the grille 104 entering a recirculated air inlet (not shown) in the ceiling 18 to air conditioning equipment (not shown) in the roof zone of the vehicle at one end for redistribution to the interior of the vehicle. The roof zone area above compartment ceiling 17 accommodates vitiated air duct 105 communicating with the compartment by means of ceiling outlet 106 and which exhausts smoke-laden and foul air from the compartment to the atmosphere by means of blowers (equipment not shown) disposed at the opposite end of the vehicle from that containing the air conditioning equipment above referred to.

From the foregoing it will be seen that the Pullman "compartment" has been improved to provide greater convenience and seemingly greater spaciousness in a room of given dimension by the disposition of upper and lower beds at right angles and greater comfort provided by the substitution of a sofa-bed for the usual lower berth herebefore used.

What is claimed is:

1. In a railway sleeping car, a side wall, an aisle, an aisle wall, and spaced straight transverse partitions connecting said walls and defining therewith a plurality of rectangular compartments, each compartment having a ceiling, a window in the side wall of the compartment, a bunk mounted on said side wall above the window and foldable against the ceiling, a sofa-bed contiguous to one of the partitions of the compartment and extending from the side wall substantially to the aisle wall and having one end overlapping in vertically spaced relation by an end of the bunk in one corner of the compartment, a combination member comprising an enclosed toilet, a seat and a washstand in the diagonally opposite corner of the compartment, a shelf contiguous to the aisle wall in the compartment and extending from above the other end of the sofa-bed to above the combination member and spaced below the ceiling, a fresh air duct above the aisle of the car, an inlet connecting said duct with each compartment between said shelf and ceiling, a vitiated air duct above the ceiling along substantially the center of the compartment, and an outlet therefor through the ceiling.

2. In a railway sleeping car, a side wall, an aisle wall, and a plurality of transverse, straight partitions connecting said walls at regularly spaced intervals providing a plurality of rectangular compartments, each compartment having a ceiling and having a sofa-bed contiguous to one of its partitions and extending from the side wall substantially to the aisle wall and having also a window in the side wall and a foldable bunk above said window mounted on said side wall with one end overlapping an end of the sofa-bed in one corner of the compartment, a combination member comprising an enclosed toilet, a seat and a washstand in the diagonally opposite corner of the compartment, a door in the aisle wall between the sofa-bed and the combination member of each compartment, a door in the other partition of each compartment between the combination member and the adjacent end portion of the foldable bunk when in open position for establishing communication with the adjoining compartment, a shelf contiguous to the aisle wall of each compartment and extending from above the other end of the sofa-bed to above the combination member and spaced below the ceiling, a fresh air duct above the aisle of the car, an inlet connecting said duct with each compartment between said shelf and ceiling, a vitiated air duct above the ceiling along substantially the center of the compartment, and an outlet therefor through the ceiling.

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