

April 10, 1951

G. R. ERICSON
SLEEPING CAR ARRANGEMENT

2,548,006

Filed March 9, 1946

6 Sheets-Sheet 1

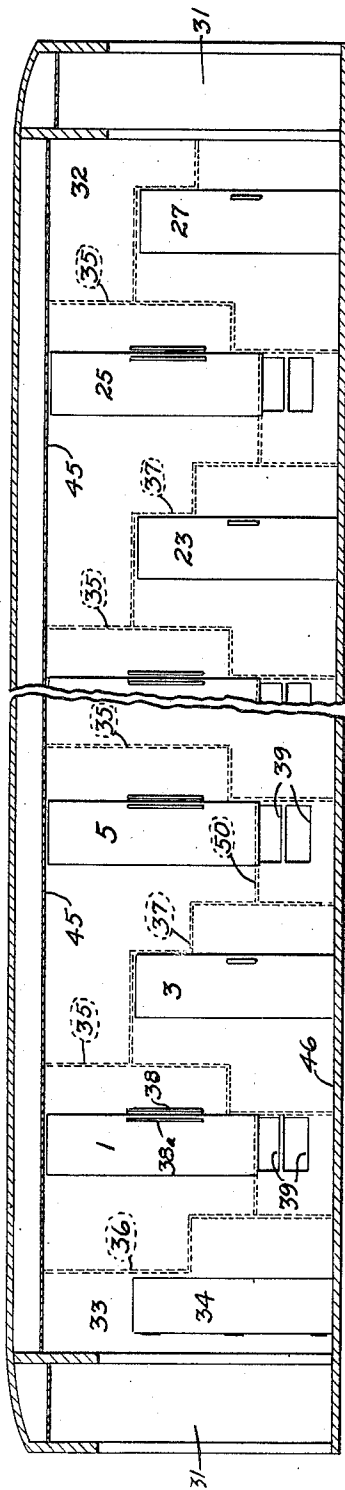


FIG. 1.

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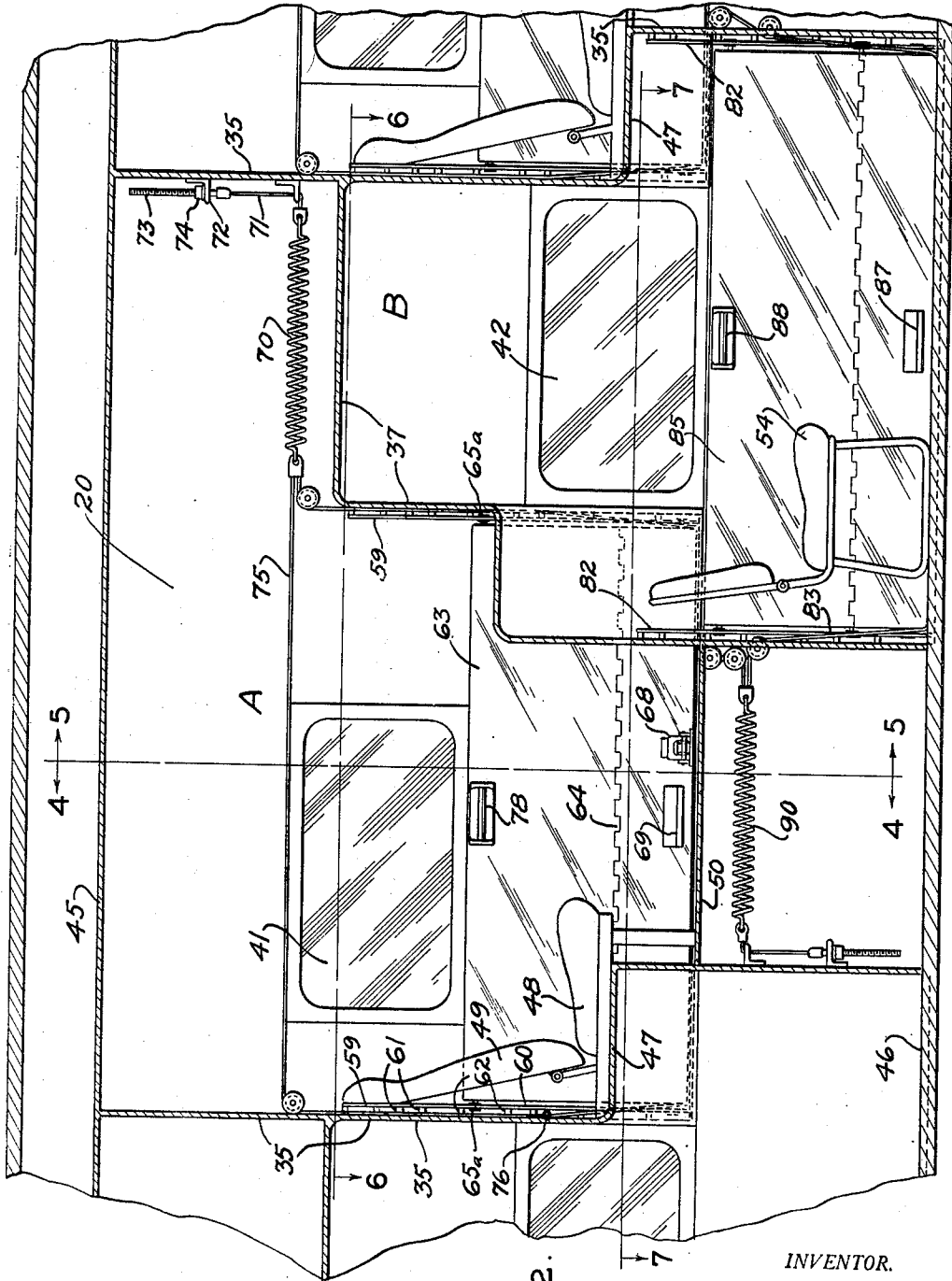


FIG. 2.

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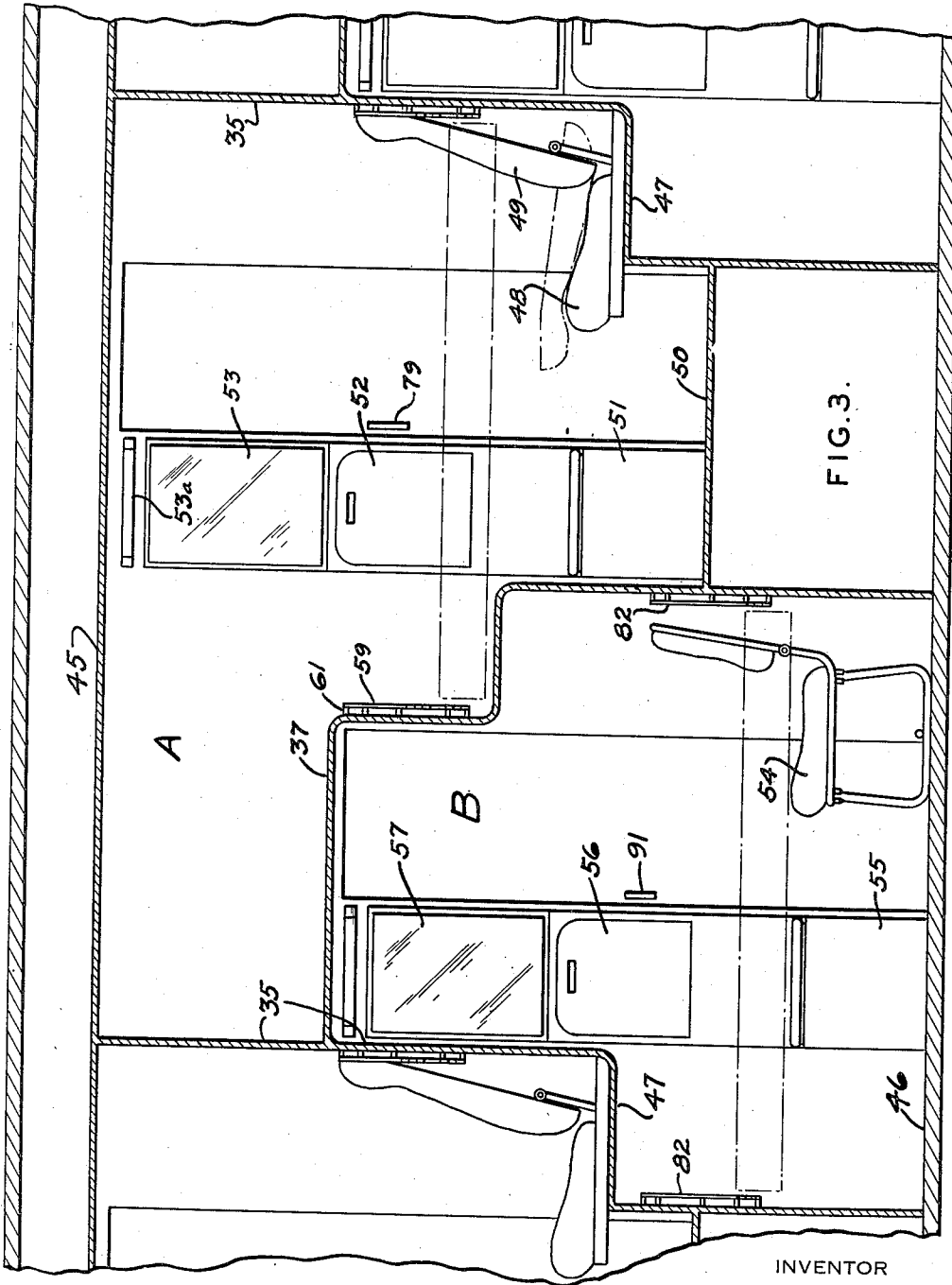
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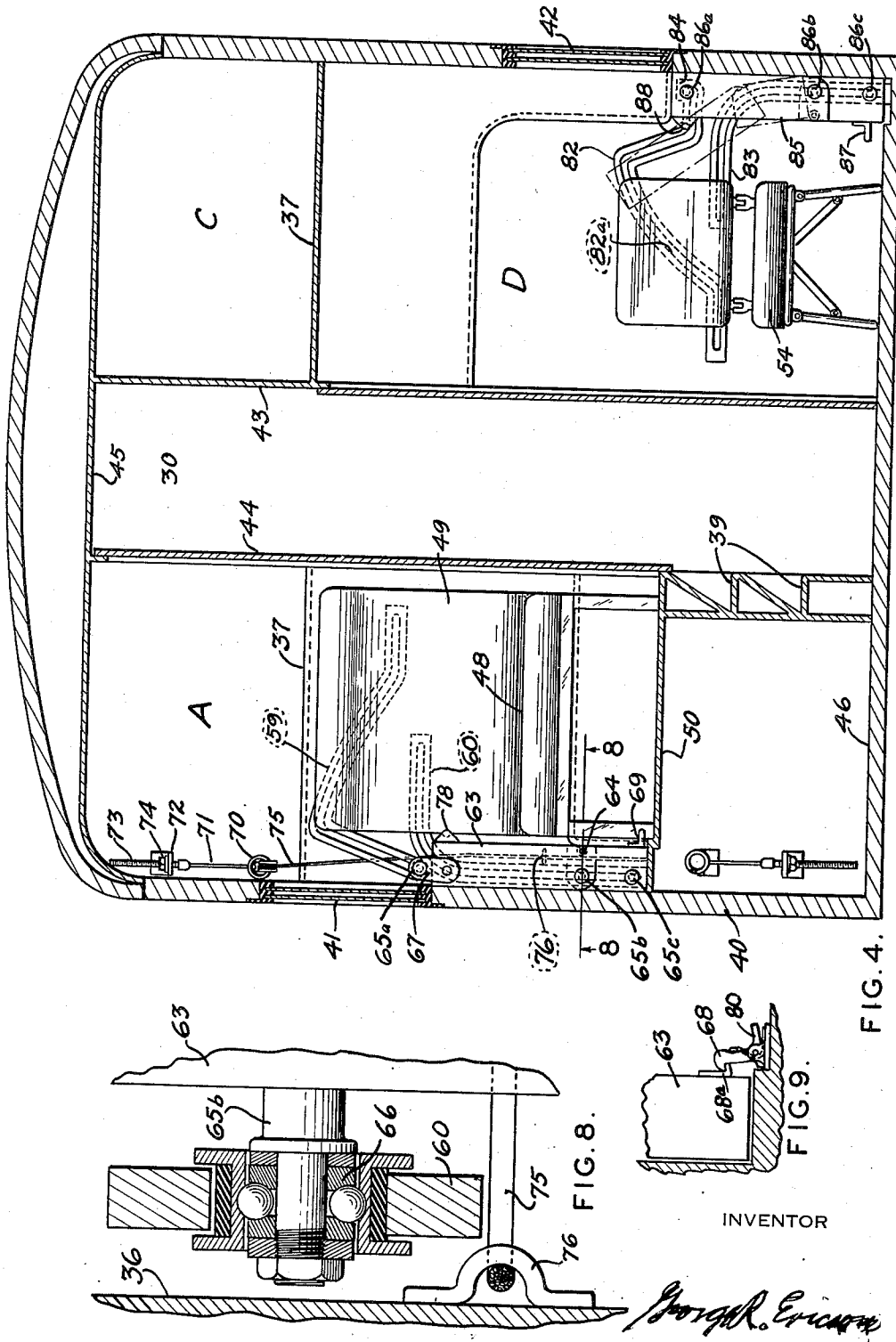


FIG. 4.

FIG. 8.

FIG. 9.

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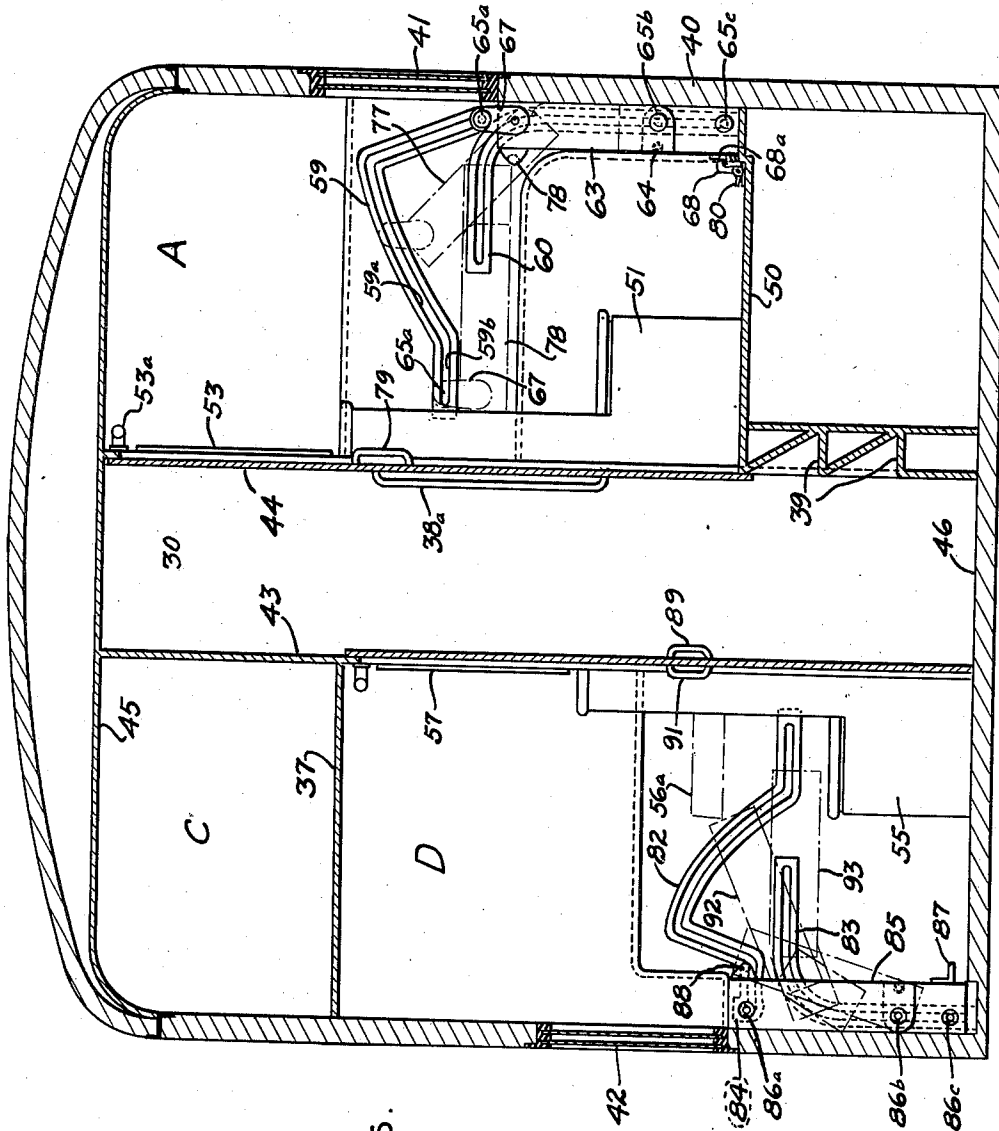


FIG. 5.

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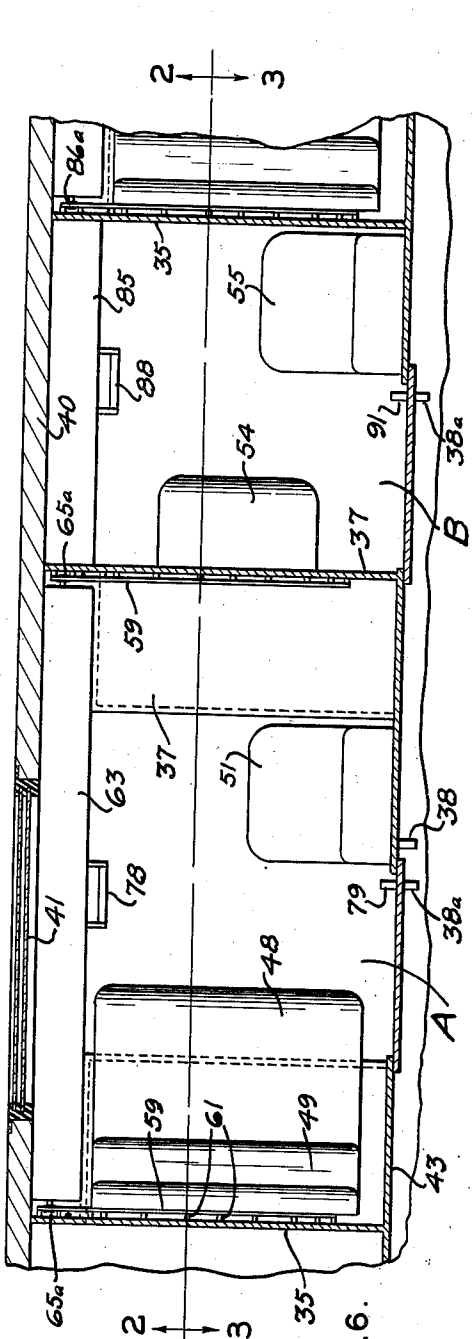


FIG. 6.

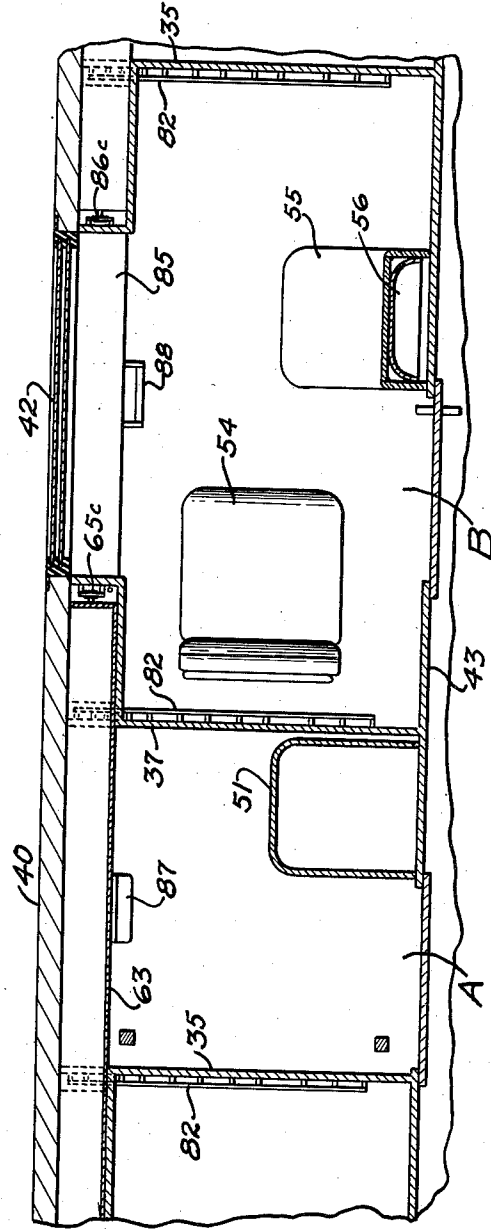


FIG. 7.

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SLEEPING CAR ARRANGEMENT

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9 Claims. (Cl. 105—315)

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This invention relates to railway sleeping cars of the fully compartmentalized or duplex roomette type.

It is, obviously, desirable to arrange a railway sleeping car so as to accommodate the maximum number of passengers consistent with reasonable comfort and privacy of and accessibility to the individual passenger. Maximum privacy and convenience is attained when each passenger is provided with an individual room and fully compartmentalized cars have been provided in which upper and lower rooms are arranged in staggered relation along the car side wall so as to make maximum use of the available space. However, since the movable beds are usually stored against the end wall, a substantial portion of the length of the car is required for this purpose and the number of rooms which can be arranged longitudinally is thus limited. Furthermore, when the bed of these previous arrangements is in the prone or sleeping position, the room is substantially filled and it is necessary for the passenger to lift the bed to its storage position in order to gain access to the toilet facilities. Moreover, in some cases, the passenger must step into the doorway of the room to release and lift the bed and a flexible curtain is provided in the doorway to permit this.

It is an object of the present invention to provide a sleeping car having the maximum number of rooms consistent with the comfort and convenience of the passenger.

It is another object to provide a sleeping car room in which the bed is stored against the side wall instead of the end wall of the room so that a minimum of longitudinal space is required for the partitioning between adjoining rooms.

Another object is to provide a sleeping car compartment or roomette having a bed which may be transversely slid and tilted by the passenger to a storage position against the side wall of the room.

Another object is to provide such a room in which the bed is subject to transverse sliding movement toward its storage position so as to clear sufficient floor space upon which the passenger may stand to complete the storage operation without the necessity of standing in the room doorway.

Another object is to provide such a room in which the bed may be partially slid towards its storage position so as to clear the toilet facilities without disturbing the bed clothes and the like, which may be on the bed, as a result of excessive tilting thereof.

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These objects and other more detailed objects hereafter appearing are attained by the structure illustrated in the accompanying drawings in which

Fig. 1 is a longitudinal center section, partly broken away, illustrating the room arrangement of a sleeping car embodying the present invention.

Fig. 2 is an enlarged, partial vertical longitudinal section taken substantially on the line 2—2 of Fig. 6.

Fig. 3 is a similar view taken substantially on the line 3—3 of Fig. 6.

Fig. 4 is a vertical transverse section taken substantially on line 4—4 of Fig. 2.

Fig. 5 is a similar section taken substantially on line 5—5 of Fig. 2.

Fig. 6 is a partial horizontal section taken substantially on line 6—6 of Fig. 2.

Fig. 7 is a similar section taken on line 7—7 of Fig. 2.

Fig. 8 is a detail horizontal section taken on line 8—8 of Fig. 4.

Fig. 9 is an enlarged detail view showing one of the bed latches.

The rooms are arranged in staggered upper and lower arrangement (Fig. 1) with fourteen on each side of the center aisle 30, those on each side being conveniently numbered alternately, as shown. Assuming the overall dimensions of a standard sleeping car, twenty-eight rooms may be provided and each compartment may be 6 feet 8 inches long and of adequate height and width. At each end of the car there is provided a vestibule 31 and at the right hand end above room No. 27 there is storage space 32 which may be utilized for an electrical control panel or for a linen closet. At the left hand end there is provided the space 33 which may conveniently accommodate a toilet, a door 34 being provided to permit access thereto. Between the adjoining upper and lower compartments, there is provided 1 inch end wall partitioning, as at 35, 36, and 37, and each room is provided with a sliding door mounted in a central doorway in the inside wall of the room. Elongated hand holds 38 and 38a are provided on the outside of each upper doorway and door, respectively, to be grasped by the passenger, first in opening the door, then in climbing steps 39 to enter the compartment.

The arrangement of the individual compartments, which makes possible this unusually large number of rooms, is shown in the remaining figures illustrating, in detail, two adjoining upper and lower rooms A and B, and opposite rooms C

and D, which are identical with all other corresponding rooms.

As best shown in Figs. 4 and 5, the rooms are arranged along opposite sides of a center aisle 36 with an upper room A directly opposite a lower room D which is identical with room B in Fig. 3. The same reference numerals are applied to identical parts in the corresponding rooms. Figs. 2 and 3 show a pair of adjoining rooms A and B along the outer side wall 40 of the car with staggered windows 41 and 42. Vertical, longitudinal walls 43 and 44 form the inner side walls of the compartments and define aisle 36 between them. End partitions 35 extend from false roof 45 to the floor 46 of the car and each has an intermediate, horizontal portion 47 upon which is mounted a seat 48 having a folding back 49 which, in its erect position, rests against the partition. The end of each room opposite wall 35 is formed by partition 37 joining partition 35 intermediately. The floor of the upper compartment A is formed by a web 53 connecting partitions 35 and 37. Mounted on the inside wall of the room is a toilet unit including hopper 51, disappearing wash basin 52, and a mirror 53 with light 53a.

Each lower room B is also defined by partitioning 35 and 37 and extends partially under upper room A. A movable chair 54 rests on the floor and has folding back and legs so that it may be laid flat on the floor when it is desired to use the bed, as described hereafter. This room has a similar toilet unit including hopper 55, wash basin 56, and mirror 57.

Mounted on end wall panels 35 and 37 of each upper room are identical guideway structures 58 and 59 supported by brackets 61 and 62. A bed pan 63, formed of sections longitudinally hinged as at 64, is normally stored in an edgewise position against the outer side wall beneath window 41 (Figs. 2 and 4). This bed pan is adapted to receive a mattress and bedding to form a comfortable bed of adequate size. The bed pan extends longitudinally of the room and has three stub shafts 65a, 65b, and 65c, projecting from each end thereof. Shafts 65b and 65c each receives a roller bearing 66 (Fig. 8), these bearings riding in the lower guide structures 60. Stub shafts 64a on the upper edge of the pan (Fig. 4) mount pivotal brackets 67 carrying similar bearings which ride in upper guide-ways 59. In the storage position, a spring latch 68 on floor web 59 engages bracket 68a on the bottom edge of the bed pan (Figs. 5 and 9) to lock the bed in position. The final latching movement of the bed is effected by the passenger exerting his weight on a foot bracket 69 near the lower edge of the bedpan.

Spring means to assist raising of the bed to its prone position is illustrated in Figs. 2 and 4. This means comprises a coiled tension spring 70 having a cord 71 on one end adjustably connected to a bracket 72 on end wall 35 by means of a screw 73 and nut 74. At the opposite end of the spring there are attached the ends of a cord loop 75 which extends along each end of the bedpan and under the lower side edge thereof. This cord extends through eye brackets 76 (Fig. 8) which limit the retraction of spring 70 and, consequently, the effort of the spring in lifting the bed. In Fig. 5, the broken line positioning 77 of the bed is about that to which it will be moved under the influence of the spring mechanism. Preferably, the strength of spring 70 very nearly balances the weight of the bed so that the passenger or porter

must apply only slight pulling force to handle 78 to start the bed towards its prone position.

When it is desired to withdraw the bed from its storage position, the passenger steps on projecting finger 80 of latch 68 and then draws handle 78 upwardly and outwardly. When the bed reaches the position 77 (Fig. 5), bearing rollers 65a will be located in the outwardly and downwardly inclined portion 59a of guide structure 59 so that the operator may exert his weight on the bed to continue its movement by camming action to the prone position illustrated at 93 in Fig. 5. Lower bearings 65b and 65c continue in guide structure 60 and the final horizontal sliding of the bed along guide portion 59b may be easily effected by the passenger merely sitting on the bed and pulling himself and the bed toward the inner wall by grasping the inner handle 79 on the door. This may be effected without the necessity of the passenger standing on the floor or in the doorway of the room. When all the rollers are in the horizontal portions at the left hand or inner extremities of these guide structures, the bed will be stably supported in its prone position.

The passenger may gain access to the toilet unit merely by sitting on the inner edge of the bed and pushing on handle 79 to slide the bed partially toward the outer side wall. When bearings 65a have reached the right hand extremity of horizontal guide portions 59b and the right hand side of the bed has been slightly flexed downwardly along tracks 60, the passenger will have plenty of room to stand on the floor and slightly elevate the bed, as to broken line position 77 (Fig. 5). In this latter position, the toilet unit is clear and the bed is only slightly tilted so that bed clothes and other articles on the bed will not be disturbed. Of course, the proportioning of the bed, and particularly the hinging thereof, and the size and positioning of the toilet unit may be adjusted so that this unit will be fully cleared merely upon the initial horizontal sliding of the bed without any lifting thereof.

Guide members 82 and 83 of each lower room (Figs. 4 and 5) are similar to guides 59 and 60 in the upper rooms, except that at the outer extremity of each upper guide structure 82 there is provided an upwardly offset portion 84. The longitudinally hinged bed 85 has end bearings 86a, 86b and 86c riding in the guides 82 and 83, as in the case of the upper bed. When the bed is moved flush with side wall, end bearings 86a enter offsets 84, under the influence of spring mechanism similar to that previously described, to lock the bed in its storage position. A foot bracket 87 is provided on the lower edge of the bed to be stepped on by the passenger for exerting his weight to effect the final movement of the bed to its storage position. Upon releasing the foot pressure, the bed will automatically lock, as described.

In restoring the bed to its prone position, chair 54 will be folded so as to rest flat on the floor. The operator then steps on bracket 87 to release upper bearings 86a from latching groove 84, then gently pulls upwardly and outwardly on handle 88, as before.

The spring mechanism for the lower bed is similar to that of the upper and is indicated in Fig. 2 at 90. At the limit of retraction of spring 90, bed bearings 86a will be part way down the inwardly and downwardly inclined portion 82a of upper guide structure 82 so that the passenger may exert his weight downwardly on the inner

edge of the bed to continue the movement. The final horizontal sliding portion of the bed movement is effected, as before, by the operator pulling himself and the bed toward the inner wall by grasping door handle 91. Fig. 5 illustrates at 92 the position of the bed when it has been moved just sufficiently to clear the toilet facilities. The bed is illustrated at 93 with its outer section horizontal and at the end of the camming action effected by downward movement of bed bearings 86a in upper guide structure 85. The wash basin is shown at 56a withdrawn from the unit and ready for use.

All upper rooms are exact duplicates of the room A described and all lower rooms are exact duplicates of the room B. Various elements, such as the spring mechanisms and the bed guides will be concealed by panelling in actual use. Other facilities and conveniences, as desired, may be provided within the available space. The horizontal sliding and tilting motions of the bed are much easier for the passenger than other storage movements as, for instance, vertical endwise tilting, and, further, the possibility of partial movement of the bed toward its storage position to clear the toilet facilities without disturbing the bedding is a very great advantage.

The number of units and, of course, the size thereof may be varied within the limits described by the purchasing railroad. A standard 80 foot sleeping car will easily accommodate twenty-eight of the rooms as described above, each 6 feet 8 inches long and providing room for a bed 6 feet 4 inches long and at least 2½ feet wide. Since the bed storage utilizes a portion of the side wall, the end partitioning need be only sufficiently thick for structural and sound proofing purposes.

The invention may be modified in various respects as will occur to those skilled in the art and the exclusive use of all modifications as come within the scope of the appended claims is contemplated.

I claim:

1. In a sleeping car having a room defined by spaced longitudinally extending aisle and side walls and transverse walls interconnecting the longitudinally extending walls, a bed in said room of slightly less width and length than the room, guide means for said bed having a first part arranged to support said bed in a prone position adjacent said wall, a second part to permit edge-wise sliding thereof to a position flush with said side wall, and a third part permitting slight edge-wise movement of said bed along said side wall when in said flush position, and spring means mounted along said side wall for urging said bed into said last mentioned guide means so as to lock the same in said flush position.

2. Sleeping car structure as described in claim 1 further including an actuating projection near the lower edge of the exposed face of said bed when in said flush position for engagement by a passenger's foot to lower said bed from said locked position.

3. Sleeping car structure as described in claim 1 further including an actuating bracket near the upper edge of the exposed face of said bed when in said flush position to facilitate outward movement of said upper edge along said guide means to restore said bed to said prone position.

4. In a sleeping car having a room defined by transverse end walls and longitudinally extending aisle and side walls and containing a hopper adjacent the aisle wall, a bed in the compartment

of substantially the same length and width as the compartment and overlying the hopper when in prone position, said bed being formed of sections hinged together longitudinally of the car, guide means on the end walls, and bearing means for the bed sections movable in the guide means, said guide means being formed to permit edge-wise shifting of the bed in lateral and vertical directions whereby the bed may be moved into horizontal position for occupancy and parallel with and adjacent the side wall when stored, the bed being shiftable horizontally toward the side wall while occupied by the passenger to clear a standing space in the compartment and tiltable when moved beyond such clearance position to permit access to the hopper.

5. In a sleeping car having a compartment defined by transverse end walls and longitudinally extending side and aisle walls and containing a hopper adjacent the aisle wall, a bed in the compartment of substantially the same length and width as the compartment and overlying the hopper when in prone position, said bed being formed of two sections hinged together longitudinally of the car, upper and lower guide means on the end walls, bearing means on the ends of one section of the bed engaging in the upper guide means, and bearing means on the ends of the other section of the bed engaging in the lower guide means, said guide means being formed to permit limited horizontal shifting of the bed sufficient to clear standing room in the compartment and upon further edgewise movement of the bed to cause tilting of the bed section mounted in the upper track to clear the hopper and vertical movement of the bed pivoted in the lower track.

6. In a sleeping car having a compartment defined by transverse end walls and longitudinally extending side and aisle walls and containing a hopper, a bed in the compartment of substantially the same length and width as the compartment and overlying the hopper when in prone position, said bed being formed of two sections hinged together longitudinally of the car, upper guide means on the end walls having a horizontal portion terminating in an angular portion, rollers carrying the ends of one section of the bed mounted in said guide means, lower guide means on the end walls extending horizontally and vertically at the ends and joined by a curved intermediate portion, and rollers carrying the ends of the other bed section mounted in said last mentioned guide means, the upper guide means causing the bed section mounted therein to move horizontally a limited distance when pushed laterally of the compartment and to move angularly therebeyond to clear the hopper when such horizontal movement is continued.

7. In a railway sleeping car having a room defined by spaced longitudinally extending aisle and side walls and spaced transverse walls interconnecting said longitudinally extending walls, a flexible bedpan in the room of slightly less length and width than the room, bearings fixed to and projecting from each end of the pan, and means on the transverse walls in which the bearings are mounted and guided, said guide means being formed to support the bearings with the pan in elevated horizontal position in the room when moved to one extreme position toward the aisle wall, with the pan bottom in vertical position adjacent the side wall when moved to the other extreme position and with the side of the pan adjacent the aisle wall in horizontal position and the other pan side in vertical position when moved

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away from the aisle wall for accommodating a passenger.

8. In a railway sleeping car having a room defined by spaced longitudinally extending aisle and side walls and spaced transverse walls interconnecting said longitudinally extending walls, a flexible bedpan in the room of slightly less length and width than the room, a plurality of bearings fixed to and projecting from each end of the pan, and guide means on the transverse walls in which the bearings are mounted, said guide means and bearings supporting said pan in elevated horizontal position in one extreme position of adjustment, said guide means including portions permitting downward flexing of the side of the pan next to the side wall and coincidental sliding movement of said pan toward said outer wall to clear a portion of the room floor space. 15

9. In a railway sleeping car having a room defined by spaced longitudinally extending aisle and side walls and spaced transverse walls interconnecting said longitudinally extending walls, a flexible bedpan in the room of slightly less length and width than the room, a plurality of bearings projecting from each end of the pan, means on the transverse walls in which the bearings are mounted and guided, said guide means being formed to support the bearings with the pan in elevated horizontal position in the room when 20

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moved to one extreme position toward the aisle wall, with the pan in vertical position adjacent the side wall when moved to the other extreme position and with the side of the pan adjacent the aisle wall in horizontal position and the other pan side in vertical position when moved away from the aisle wall in an intermediate position, and counterbalancing spring means attached to the pan and fixed in the room.

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