Dec. 23, 1952 M. WATTER 2,622,544

RAILWAY CAR ROOM ARRANGEMENT

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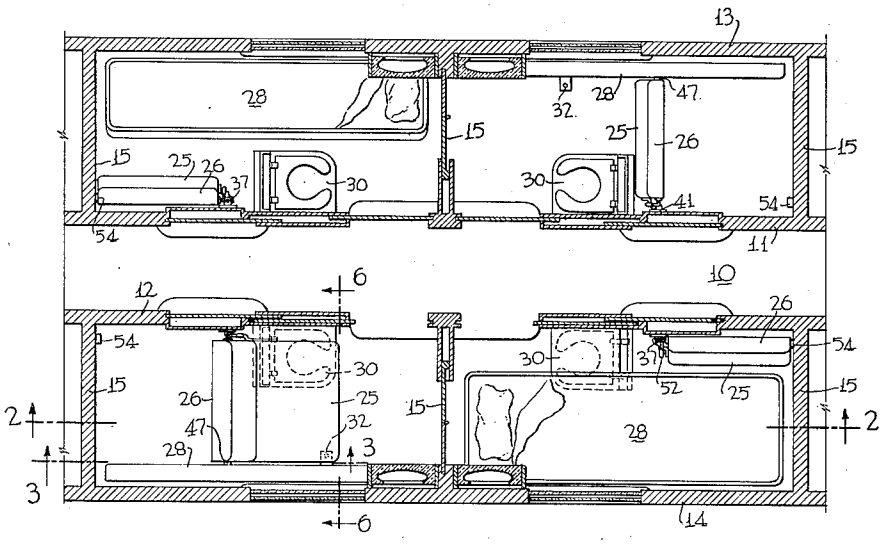


FIG. 1

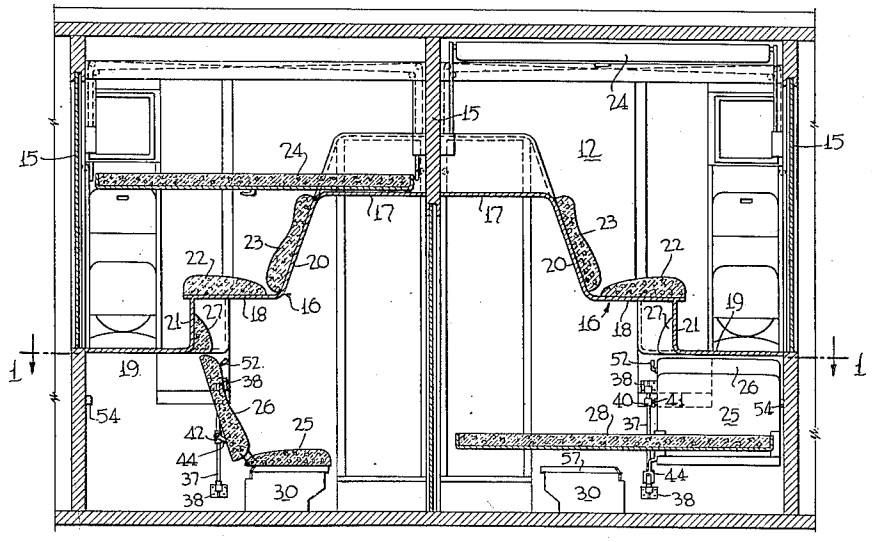


FIG. 2

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FIG. 3

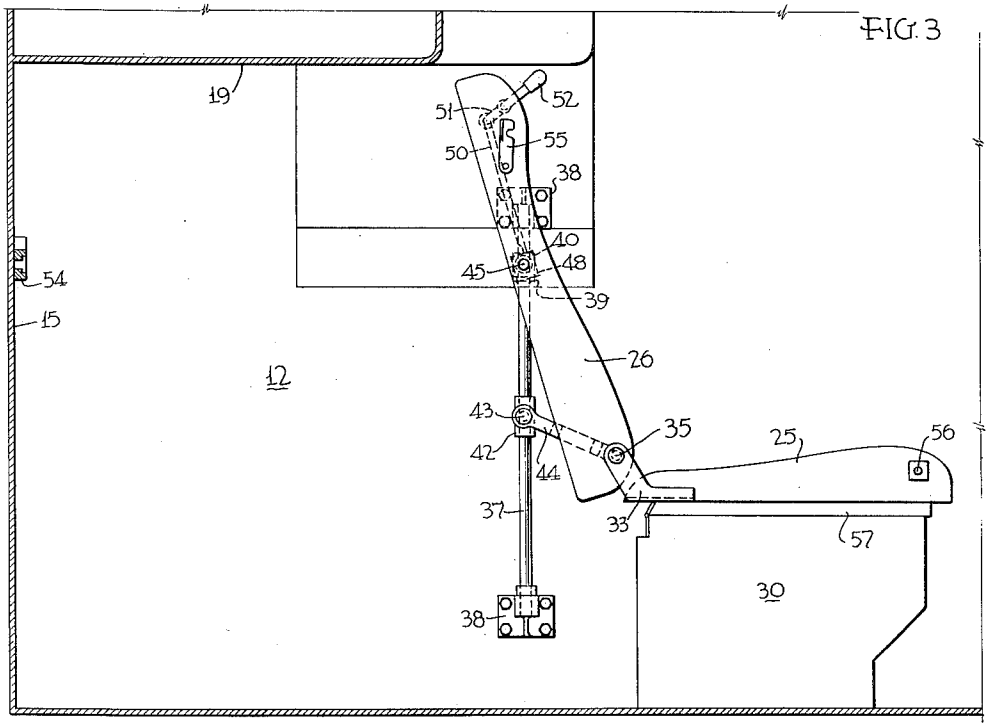


FIG. 4

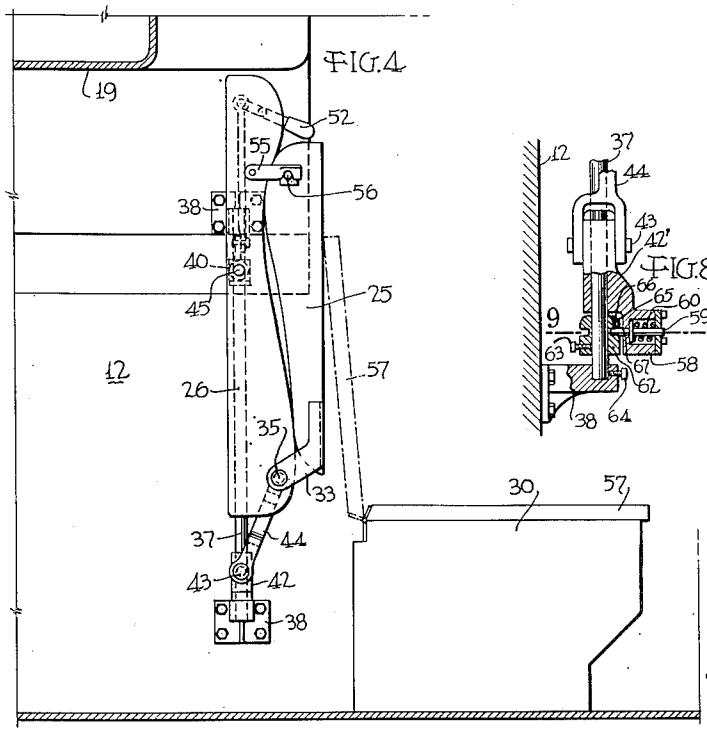


FIG. 8

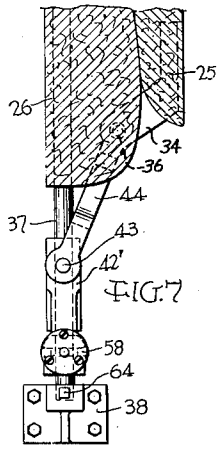


FIG. 7

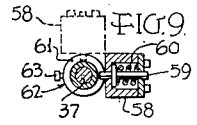


FIG. 9

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FIG. 5

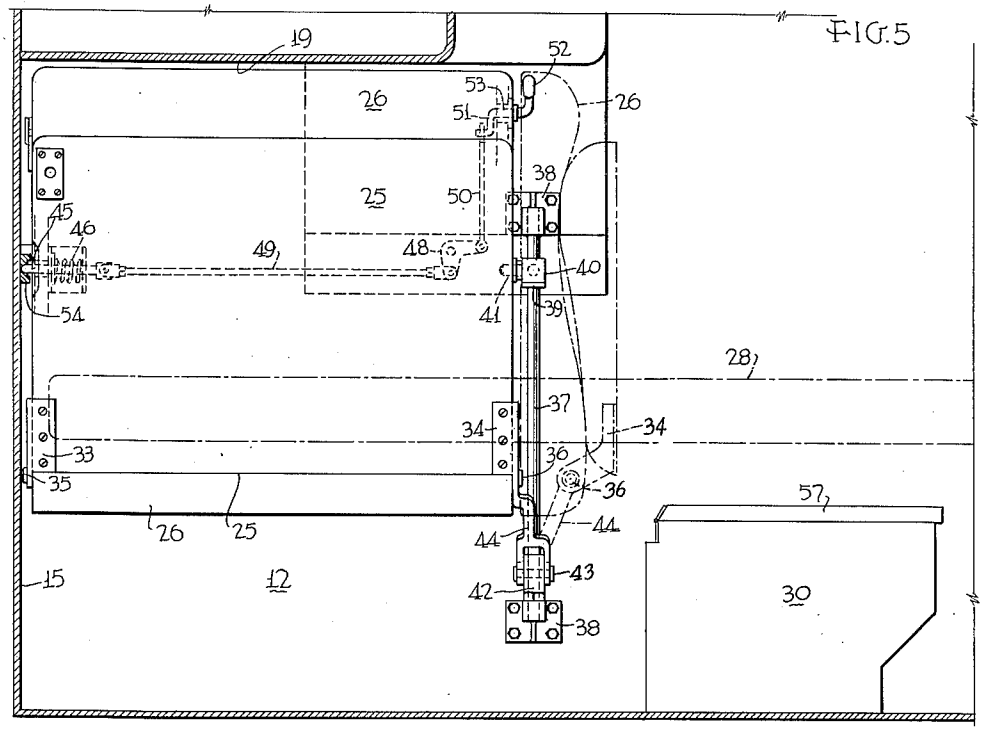
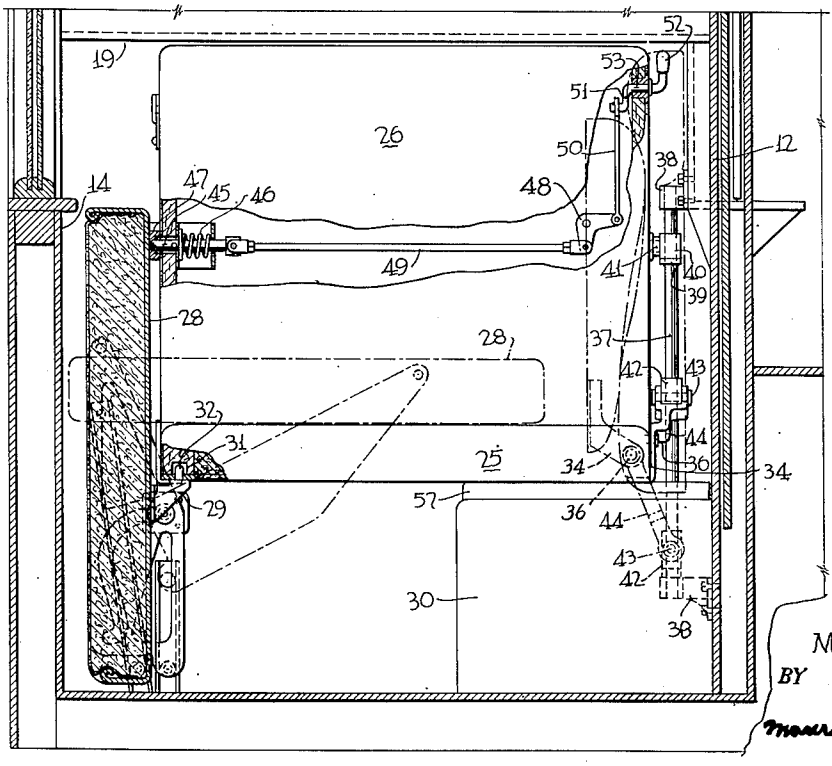


FIG. 6



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Patented Dec. 23, 1952

2,622,544

UNITED STATES PATENT OFFICE

2,622,544

RAILWAY CAR ROOM ARRANGEMENT

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Application March 19, 1949, Serial No. 82,395

8 Claims. (Cl. 105—315)

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The invention relates to sleeping cars and, more particularly, to the room arrangement of such cars.

The invention is especially concerned with the arrangement of convertible sleeping car rooms disposed along one side of a center aisle and having a bed extending along substantially the full length of the room and where the room in question is one of a pair of longitudinally-overlapping such rooms.

A main object of the invention is the provision of a simplified arrangement of the seat and seat back in the rooms, which facilitates the movement of the seat and seat back between use and stowed positions and provides for readily locking it in either of said positions. When the seat is in its stowed position, the floor of the room is freed for the movement of the bed to its use position.

This and other and further objects and advantages and the manner in which they are attained will become evident from the following detailed description when read in connection with the accompanying drawings forming a part of this specification.

In the drawings:

Fig. 1 is a sectional plan view of a portion of a railway car equipped with the invention, a pair of adjacent rooms being shown arranged on opposite sides of the center aisle; the pair at the top of the view being shown, the one at the right made up for daytime occupancy and the one at the left, for nighttime occupancy, with the bed in an intermediate position affording access to the hopper; the pair of rooms at the bottom of the view being shown, the one at the right made up for nighttime occupancy and the one at the left, for daytime occupancy; and the section being taken substantially along the line 1—1 of Fig. 2;

Fig. 2 is a vertical longitudinal sectional view through the portion of the car shown in Fig. 1, the section being taken substantially along the line 2—2 of Fig. 1;

Fig. 3 is an enlarged longitudinal sectional detail view through a portion of a lower room, the section being taken substantially along the line 3—3 of Fig. 1;

Fig. 4 is a view similar to Fig. 3 but showing the seat and seat back in folded condition to provide access to the hopper;

Fig. 5 is a view similar to Figs. 3 and 4 but showing the seat and seat back in full lines in the stowed position and in dot-and-dash lines in the intermediate position of Fig. 4, the use position of the bed being indicated in dot-and-dash lines;

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Fig. 6 is a detail transverse vertical sectional view taken substantially along the line 6—6 of Fig. 1; and

Figs. 7, 8 and 9 are detail views, showing an alternative manner of latching the seat and seat back together in folded condition, Fig. 7 being a side elevational view, Fig. 8 a view at right angles to Fig. 7, with parts shown in section, and Fig. 9 a sectional view taken along the line 9—9 of Fig. 8.

The room arrangement to which the invention has been applied is generally similar to that shown in copending application Serial No. 24,034, now Patent No. 2,548,293, April 10, 1951, in the names of C. L. Eksergian and Michael Watter, filed April 29, 1948, and entitled "Sleeping Car with Superposed Rooms," although it will be understood that the invention may have application in other relations.

The railway car is shown having superposed rooms arranged on opposite sides of the center aisle 10 and between the longitudinally extending aisle walls 11 and 12 and the adjacent car side walls 13 and 14.

Each pair of rooms is defined by an aisle wall, as 11 or 12, a car side wall, as 13 or 14, and a pair of spaced transverse walls 15 interconnecting the car side and aisle walls and defining the ends of a superposed pair of rooms. The rooms of a pair are separated by a generally horizontally extending partition 16 interconnecting the side, aisle and transverse walls of the pair. This partition has an upper horizontal portion 17 extending longitudinally inwardly from one transverse wall 15 a distance sufficient to provide standing-height space in the lower room, an intermediate horizontal portion 18, and a lower horizontal portion 19 extending inwardly horizontally from the opposite transverse wall 15 and providing standing-height space in the upper room.

The horizontal portions 17 and 18 are interconnected by a generally vertically extending inclined portion 20 and the horizontal portions 18 and 19 by a generally vertically extending portion 21.

The three vertically offset portions 17, 18 and 19 thus divide the rooms lengthwise into a standing-height section, a sitting-height section, and a less-than-sitting-height section, these sections being reversely arranged for the superposed rooms.

In each upper room, the seat 22 and its back 23 are disposed on the intermediate horizontal portion 18 and against the inclined vertical portion 20, respectively, and facing the standing-height

space of the room. The bed 24, when in use position, extends horizontally substantially the length of the room with one end disposed on the upper horizontal portion 17 of the partition 16, as shown at the left of Fig. 2. It may be moved to a stowed position adjacent the ceiling, as shown at the right of Fig. 2. Since the arrangement in the upper rooms forms no part of the invention, further description thereof would be superfluous.

The invention is particularly concerned with the arrangement of the appointments in the lower rooms, and this will now be described in detail.

In the sitting-height space of each lower room are arranged the seat proper 25 and the seat back 26. The seat back 26 may be extended upwardly by a headrest 27, see Fig. 2, secured to the adjacent vertical portion 21 of the partition 16. The bed 28, which extends substantially the length of the room, is a fixed-length normally made-up bed and is normally stowed, when the room is made up as a stitting room, along the car side wall, as shown at the right (top) and the left (bottom) of Fig. 1 and in full lines in Fig. 6.

When the bed is in this stowed position, the seat 25 finds its support on a bracket 29 (Fig. 6) affixed to the bottom of the bed and on the top of the hopper 30 disposed under the seat adjacent the aisle wall. The bottom of the seat has a socket 31 formed in a member carried by the seat, which socket receives a pin 32 projecting upwardly from the bracket 29 to provide an interlock which prevents longitudinal movement of the seat when supported in its use position on the bracket 29 anad hopper 30.

The seat 25 and its back 26 are so constructed and mounted in the room as to permit their easy folding together in compact relation, as shown in Fig. 4, and then their swinging about a vertical axis adjacent the aisle wall to a stowed position folded against the aisle wall, as shown in Fig. 5, at the right of Fig. 2, and in Fig. 1 (top left and bottom right).

To this end, the seat proper 25 and the back 26 are hinged together through brackets 33 and 34 secured to the seat (see Fig. 5) and headed pivot pins 35 and 36 adjacent the lower end of the seat back and at its opposite sides.

Further, the seat and seat back are together mounted on a vertical rod 37 secured at top and bottom to the brackets 38, 38 secured to the aisle wall 11 or 12. Adjacent its upper end this rod is provided with a shoulder 39, and a sleeve 40 having a laterally projecting trunnion 41 is pivoted, through the trunnion, to the seat back 26 at a point nearer its top than its bottom. This sleeve 40 normally rests on the shoulder 39 and supports the seat and seat back.

Adjacent the bottom, the seat and seat back are connected to the vertical rod 37 through a sleeve 42 slidably engaging the rod and pivoted at 43 to the bifurcated end of an extension arm 44 of the bracket 34 beyond its pivot pin 36, see Figs. 5 and 6.

The seat back, when in use posiiton, is normally locked to the stowed bed 38, as is clearly shown in Fig. 6. Such locking means may comprise a transversely sliding plunger 45 mounted on the seat back and pressed by a spring 46 into locking engagement with a socket in a member 47 secured to the bottom of the bed.

The plunger is moved to release position through a bell crank lever 48 and links 49 and 50, the latter being connected to a crank 51 on a manually-actuated handle 52 pivotally mounted at 53 at the aisle side of the seat back near the top thereof, where it is readily accessible.

As shown in Fig. 5, this same plunger and its actuating means is also adapted to cooperate with a locking socket in a member 54 provided on the transverse room wall 15 to secure the combined folded seat and seat back in the inoperative position, where they are folded against the aisle wall.

The operation of the device will now be described.

If the parts are in the daytime use position, as indicated in Fig. 3, and it is desired merely to gain access to the hopper 30, the handle 52 is pulled forwardly and downwardly to release the plunger 45 and the seat and seat back can then be swung, by merely raising the front of the seat, to the vertical folded position shown in Fig. 4. Seat and seat back are locked together in this folded condition by any suitable means, such as the pivoted latch 55 on the back engaging a pin 56 on the seat. The hopper seat 57 can then be raised from the full-line position to the dot-and-dash line position shown in Fig. 4.

If it is desired to convert the room to a sleeping room, after the seat and seat back have been moved to the position shown in full lines in Fig. 4 and in dot-and-dash lines in Fig. 5, they are together swung about the vertical rod 37 to the stowed position shown in full lines in Fig. 1 (top left and bottom right), Fig. 2 (right), and Fig. 5, and also in dot-and-dash lines in Fig. 6, where they are locked by the plunger 45 and socket 54.

The floor is then cleared for the full length of the room for the movement of the bed from its stowed position shown in Fig. 1 (top right and bottom left) and Fig. 6 to the intermediate position shown in Fig. 1 (top left) or to the horizontal use position shown in full lines in Fig. 1 (bottom right), Fig. 2 (right), and in dot-and-dash lines in Figs. 5 and 6.

Any suitable means may be employed for so moving the bed and for supporting and locking it in the various positions.

Instead of employing a manually-operated latch, such as 55 shown in Figs. 3 and 4, for latching the seat and seat back together in folded condition as shown in Fig. 4, an automatically operative latch, such as is shown in Figs. 7, 8 9, is preferably employed.

Such latch may comprise a lateral and downward extension 58 from the sleeve 42' corresponding to the sleeve 42 hingedly connected at 43 to the extension arm 44 of the bracket 34. The extension 58 carries a spring-pressed latch plunger 59 which, when the seat 25 is moved to the folded position shown in these Figs. 7, 8 and 9 and in Fig. 4, is automatically snapped by its spring 60 into an annular groove 61 formed in sleeve 62 rigidly clamped to the lower end of the rod 37, as by a screw 63. The rod 37 is shown secured against rotation in the bracket 38, as by a screw 64. To permit the plunger 59 to be automatically snapped into the latching groove 61, the sleeve 62 is formed on the side thereof opposite the aisle wall, as 12, with a vertical groove 65 extending between the top of the sleeve 62 to the annular groove 61. The bottom of this groove has a cam face, the upper portion 66 of which is of more gradual inclination outwardly, as is clearly seen in Fig. 8, than the lower portion 67 which inclines inwardly toward the bottom of the annular groove 61. As the sleeve 42' reaches the lower limit of its travel,

with the seat and seat back in the transversely arranged position, the spring-pressed plunger enters the vertical groove 65 and is first cammed outwardly by the upper portion 66 of the bottom of the groove to compress the spring 60 and after it passes the high point of the cam between inclines 66 and 67, it is snapped into the groove 61 under the action of the spring to latch the parts in this position. When the plunger is angularly positioned to be aligned vertically with the groove 65, the plunger may be cammed out of the groove 61 by applying sufficient force to the seat 25 and the parts may then be returned to the use position indicated in Fig. 5. Specifically, this release is produced by a forward pull on the seat, which raises the sleeve 42' and causes the plunger to be cammed out of the groove 61 by the more steeply inclined lower portion 67 of the bottom of the vertical groove 65.

When the seat and seat back are latched in the folded-together position, as shown in Figs. 7, 8 and 9 and Fig. 4, they may be swung about the rod 37, as hereinbefore described, to the stowed position adjacent the aisle wall. During such swinging movement the latch plunger 59 moves in the annular slot 61 from the full-line position shown in Fig. 9 to the dot-and-dash-line position shown in said figure. During this movement, the seat and seat back are positively held in the folded-together position as soon as the plunger is moved out of alignment with the vertical cam groove 65. Thus at all times except when so aligned, the seat and seat back are positively locked together in folded condition. Only when the seat and seat back are swung to the position in which they extend transversely and the plunger is thereby brought into the same vertical transverse plane as the vertical slot 65, can the plunger be cammed out of the slot 61 by the action of the cam at the bottom thereof, if a sufficiently strong outward pull is exerted on the upper margin of the vertically extending seat to bring the parts to the use position shown in Fig. 5.

With this arrangement it will be seen that the entire operation of the latching plunger is automatic and follows upon the manual raising and lowering of the seat, which is necessary in any case. To lower the seat, a somewhat greater force is necessary than to raise it in view of the different inclination of the cam portions.

While but two embodiments of the invention have been illustrated and described, it will be understood by those skilled in the art that further changes and modifications may be made without departing from the spirit and scope of the invention.

What is claimed is:

1. In a railway sleeping car, a room defined by longitudinally extending center aisle and car side walls and spaced transverse walls interconnecting said aisle and car side walls, a full-length bed in the room extending substantially the length thereof and normally stowed in vertical position flanking the side wall, a longitudinally facing seat and seat back extending substantially from stowed bed to aisle wall when in use position, said seat and seat back being hingedly joined together to permit folding them one against the other, and being hingedly mounted along a substantially vertical axis adjacent the aisle wall to permit swinging them through substantially 90° from the normal use position to a stowed position with the seat back against the aisle wall, and means for securing the seat and seat back in use and stowed positions.

2. In a railway sleeping car, a room defined by longitudinally extending center aisle and car side walls and spaced transverse walls interconnecting said aisle and car side walls, a full-length bed in said room extending substantially from transverse wall to transverse wall of the room and normally stowed in vertical position flanking the car side wall, and a longitudinally facing seat and seat back disposed in use position alongside said stowed bed and extending substantially from said stowed bed to the aisle wall, said seat and its associated back being foldable against each other and then together swung about a vertical axis adjacent the aisle wall into a position flanking said wall so as to permit movement of the bed to a horizontal use position.

3. In a railway sleeping car, a full sleeping-length and width room defined in part by longitudinally extending car side and center aisle walls, a floor and a stepped ceiling for the room, the latter making one end of the room of less-than-standing height and the other end thereof of standing height, a seat in the room normally, in use position, facing the standing-height section and having a back hinged thereto, the seat and seat back being hinged by a vertical pivot means adjacent the aisle wall and at a point therealong beyond the standing-height section and being swingable about said pivot means into said end of the room of less-than-standing height into a stowed position flanking the aisle wall, and means for locking the seat and seat back in said position, the room, when the seat and seat back are in stowed position, providing space for a full-length bed extending across the space normally occupied by the seat and back in use position.

4. In a railway sleeping car, a full sleeping-length and width room defined by longitudinally extending car side and center aisle walls, and spaced transverse walls interconnecting said car side and aisle walls, a stepped ceiling for said room making one end thereof of standing height and the other end thereof of less-than-standing height, a seat normally, in use position, facing longitudinally toward the standing-height portion of the room and extending substantially the width of the room, said seat having a back hinged thereto and the seat and back being together hinged to swing about a vertical pivot adjacent the aisle wall at a point therealong beyond the standing-height section, the seat being foldable against the back and the two together being swingable to a stowed position against the aisle wall in the less-than-standing-height end of the room, the room, when the seat and seat back are in stowed position, providing space for a full-length bed extending across the space normally occupied by the seat and back in use position.

5. In a sleeping car, a full sleeping-length and width room defined by longitudinally extending car side and center aisle walls and spaced transverse walls interconnecting said car side and aisle walls, a stepped ceiling for the room providing a low portion adjacent one end of the room making it of less-than-standing height in said region and a high portion adjacent the other end of the room of full standing height, a longitudinally facing seat and seat back in the room in front of said less-than-standing-height end of the room and normally, in use position, facing the standing-height end, said seat comprising a seat proper and a seat back hinged together and collapsible one upon the other, the back being swingable about a hori-

zontal axis other than the hinge axis with the seat, and the seat and back being further swingable together about a vertical axis adjacent the aisle wall at a point therealong beyond the standing-height section to a stowed position flanking said aisle wall, the room, when the seat and seat back are in stowed position, providing space for a full-length bed extending across the space normally occupied by the seat and back in use position.

6. In a railway sleeping car, a room defined by longitudinally extending car side and center aisle walls and spaced transverse walls interconnecting said car side and center aisle walls, a floor and a stepped ceiling for the room, the latter making one end of the room of less-than-standing height and the other of standing height, a bed in the room arranged in stowed position vertically flanking the car side wall, a support bracket on the bottom of the bed, and a hopper on the room floor adjacent said aisle wall, a seat proper supported by said bracket and hopper and prevented from longitudinal movement by the interengagement of portions of said bracket and seat, said seat proper being hinged to a seat back, means for locking the seat back to the bottom of the bed, the seat and seat back being swingable about a vertical axis adjacent the aisle wall, the seat proper being liftable to disengage it from the bed bracket and, when the back locking means is released, the seat and seat back are foldable together into collapsed condition, and in said condition they are swingable about said vertical axis into stowed position below the ceiling portion of the less-than-standing-height end of the room against the aisle wall and out of the path of the bed to permit the latter to be moved to horizontal use position extending substantially the full length of the room.

7. In a railway sleeping car, a room having a floor and a ceiling, a seat and seat back in normal use position adjacent the room floor, the seat being hinged to the back to permit folding the seat and back in collapsed condition against each other, means for automatically locking them in this condition including a spring-pressed

latch plunger and cam means for moving said plunger against the action of its spring in the movement of the seat to and from its folded condition, the seat and seat back in folded condition being swingable about a vertical axis disposed along one side thereof to extend in flanking relation to an adjacent longitudinally extending wall of the room.

8. In a railway sleeping car, a room defined by longitudinally extending car side and center aisle walls and spaced transverse walls interconnecting said car side and center aisle walls, a floor for the room, a bed in the room arranged in stowed position vertically flanking the car side wall, a support bracket on the bottom of the bed, and a support member adjacent said aisle wall, a seat proper supported by said bracket and member and prevented from longitudinal movement by the inter-engagement of portions of said bracket and seat, said seat proper being hinged to a seat-back, means for locking the seat-back to the bottom of the bed, the seat and seat-back being swingable about a vertical axis adjacent the aisle wall, the seat proper being liftable to disengage it from the bed bracket and, when the back-locking means is released, the seat and seat-back are foldable together into collapsed condition, and in said condition they are swingable about said vertical axis into stowed position against the aisle wall and out of the path of the bed to permit the latter to be moved to horizontal use position extending substantially the full length of the room.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
324,561	Knight	Aug. 18, 1885
775,879	Wiersching et al.	Nov. 22, 1904
1,304,202	Richtner	May 20, 1919
1,986,342	Hutt	Jan. 1, 1935
2,220,253	Lundberg	Nov. 5, 1940