April 10, 1951 C. L. EKSERGIAN ET AL 2,548,293

SLEEPING CAR WITH SUPERPOSED ROOMS

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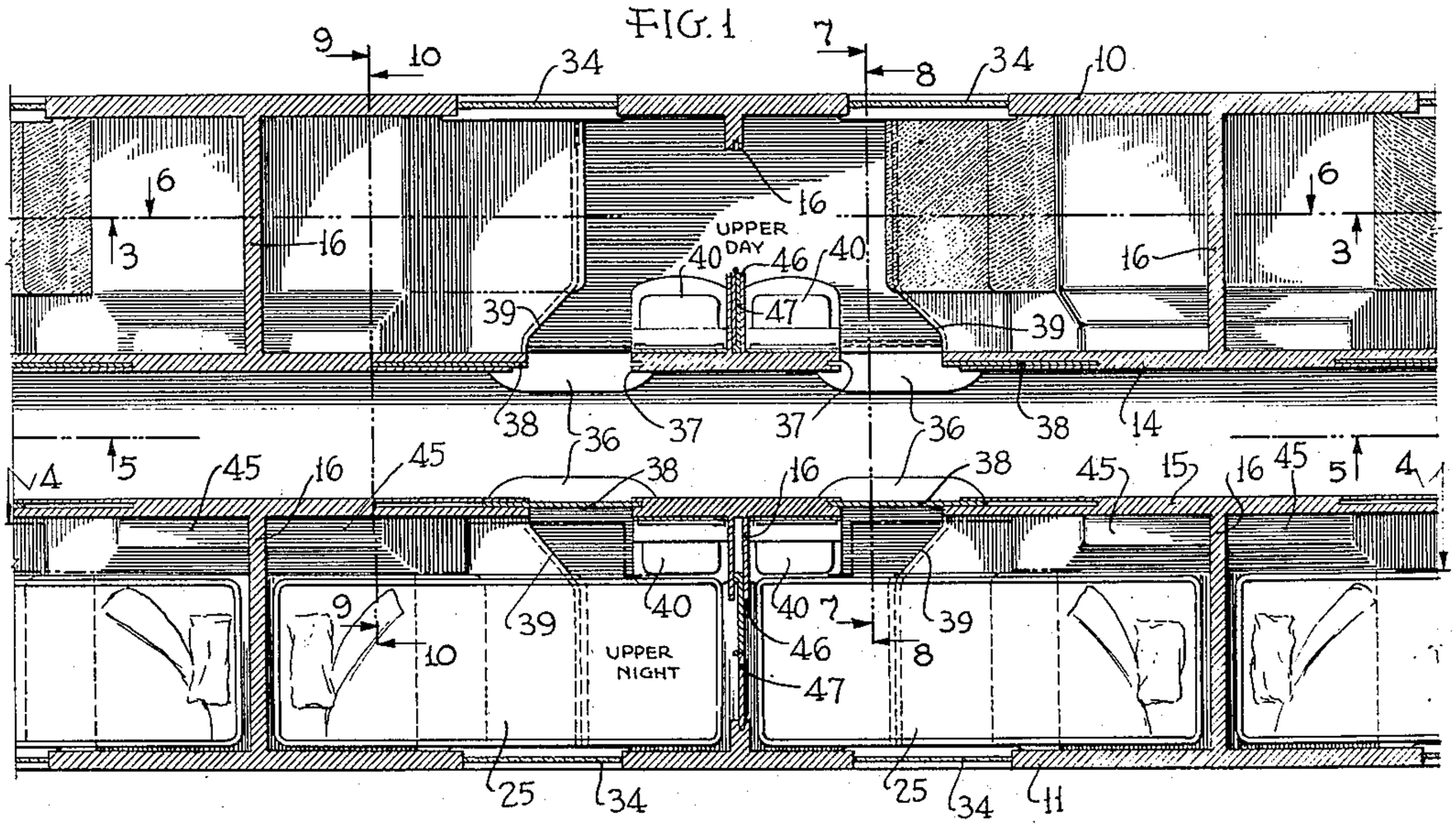
FIG. 1



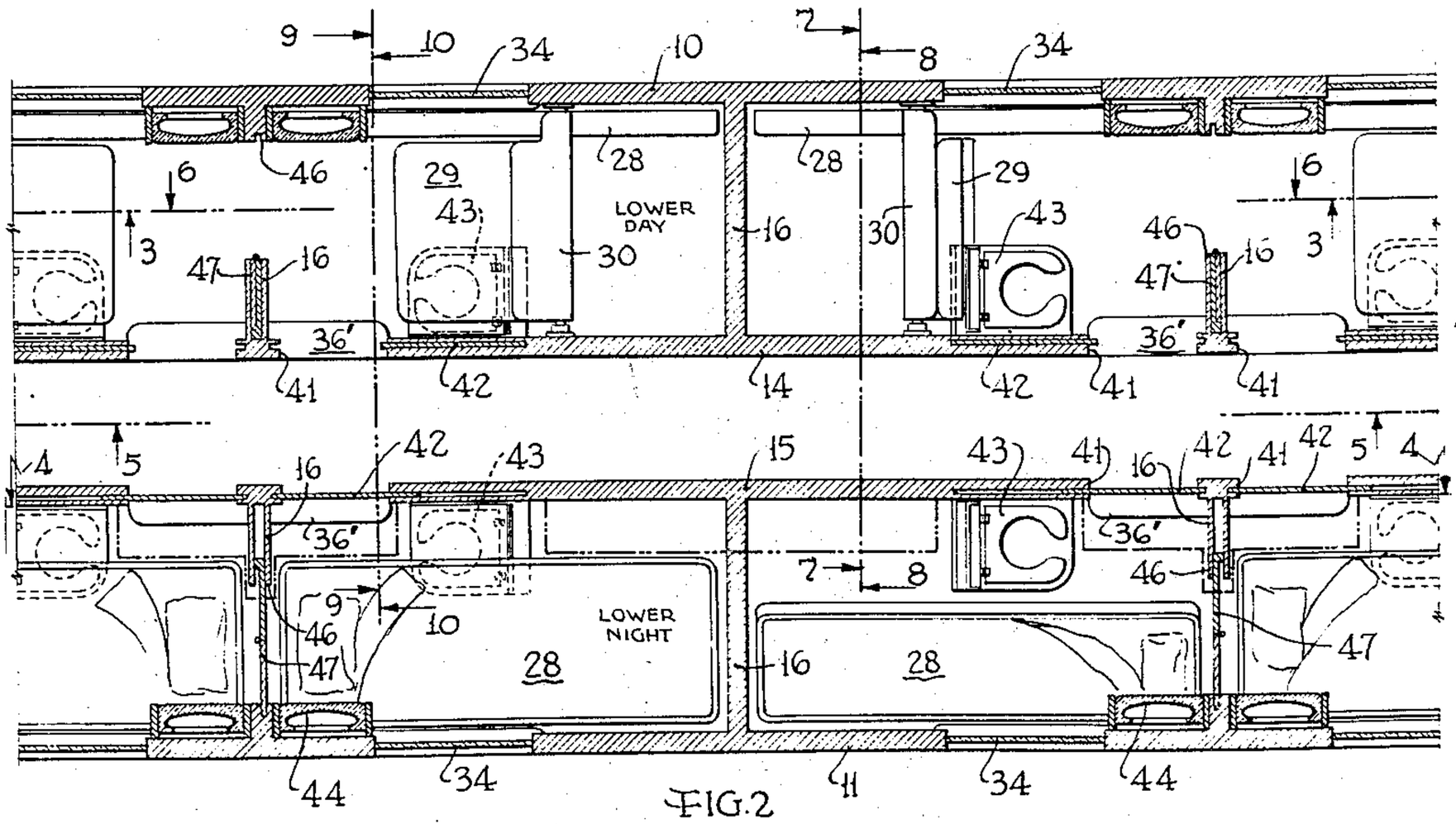


FIG. 2

INVENTORS
Carolus L. Eksergian
Michael Watter

BY Maurice A. Crowe

ATTORNEY

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FIG.3

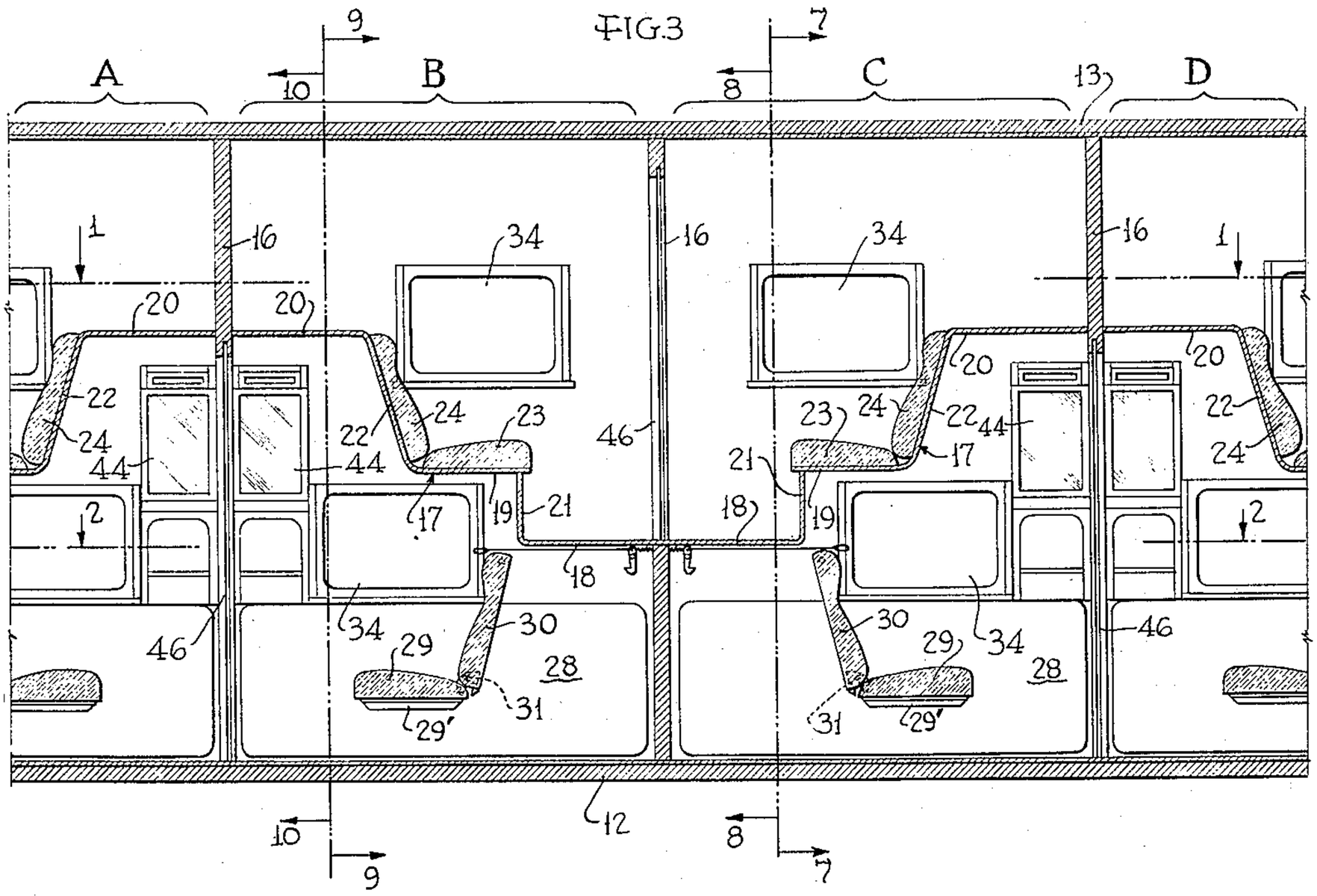

FIG.4.

INVENTORS
Carolus L. Eksergian
Michael Watter.

BY Maurice A. Crowe

ATTORNEY

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SLEEPING CAR WITH SUPERPOSED ROOMS

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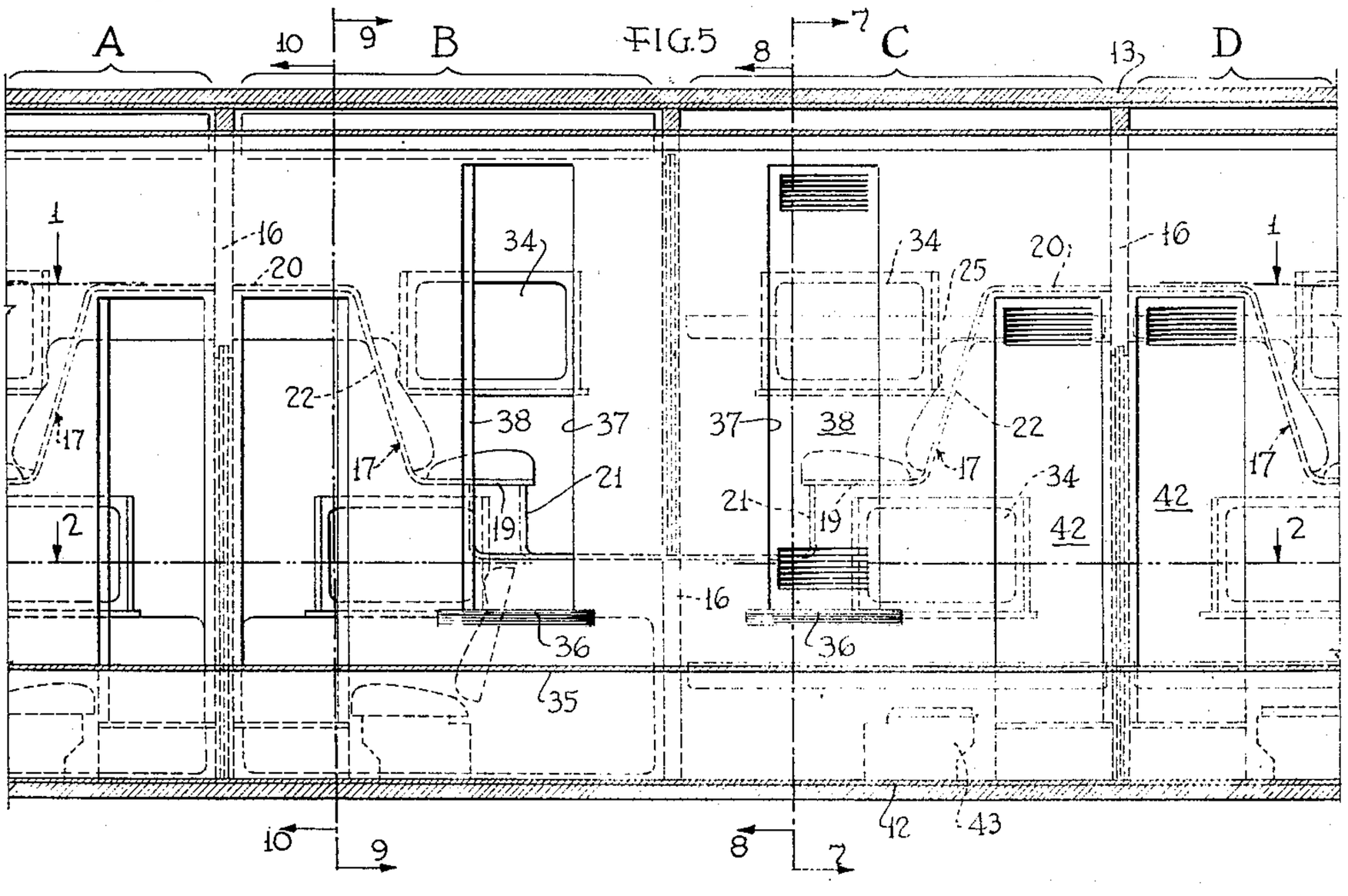

FIG.5

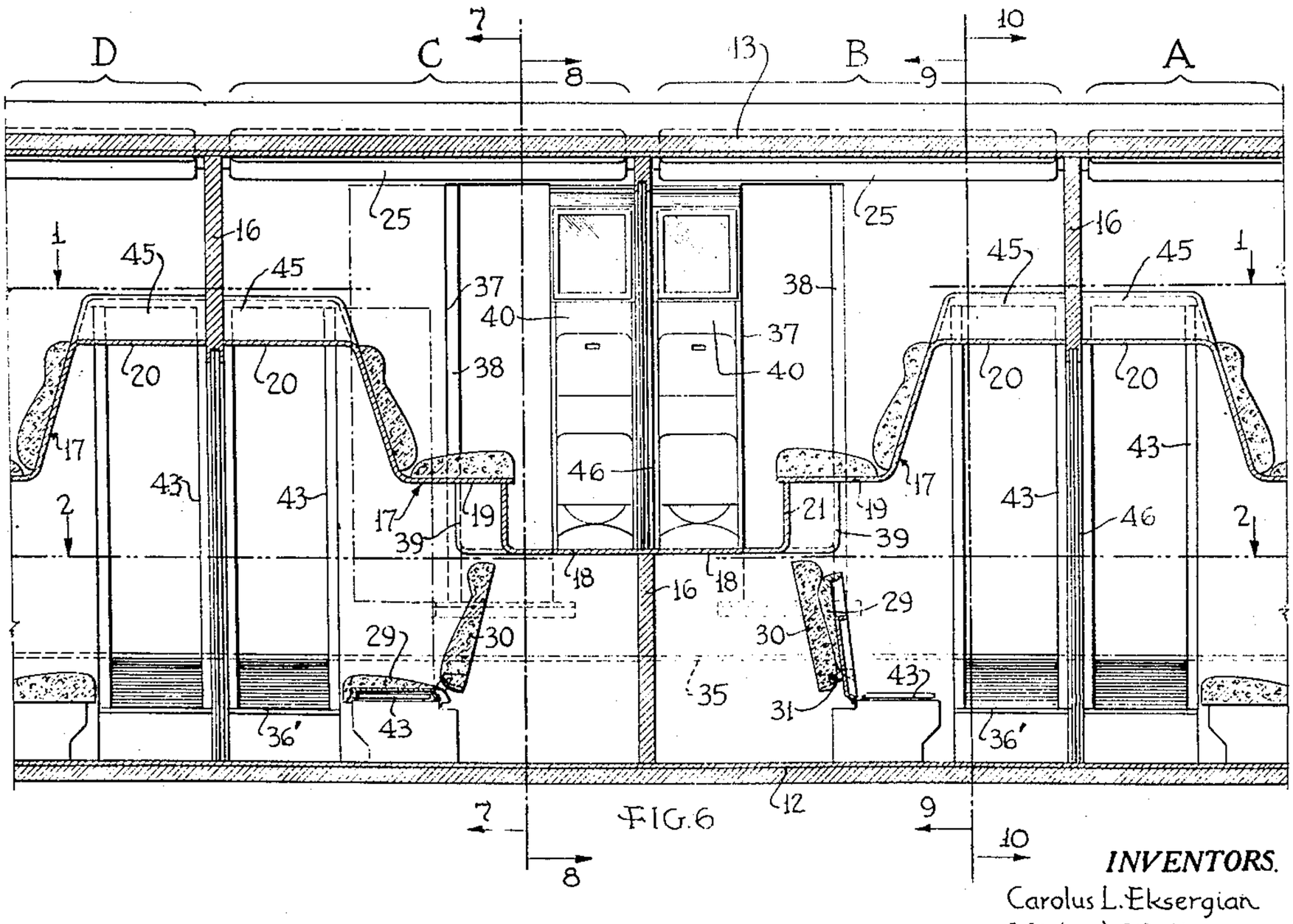

FIG.6

INVENTORS.
Carolus L. Eksergian
Michael Watter

BY Maurice A. Crews

ATTORNEY

April 10, 1951 C. L. EKSERGIAN ET AL 2,548,293

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FIG.7

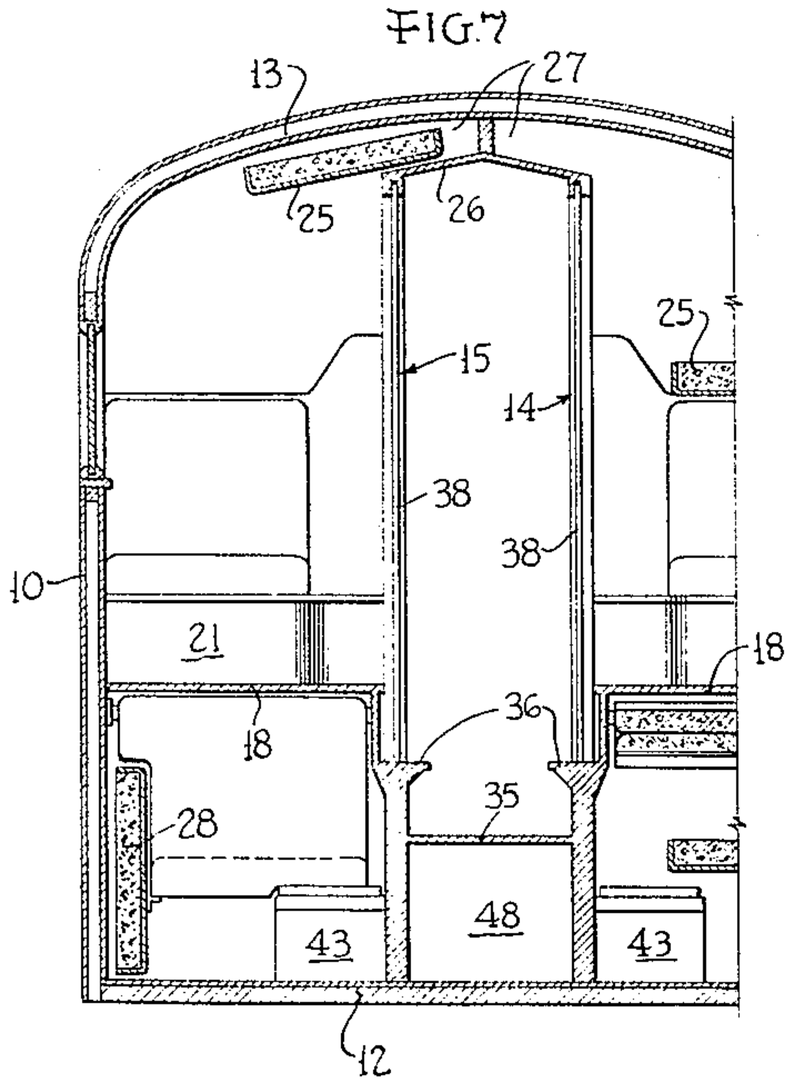
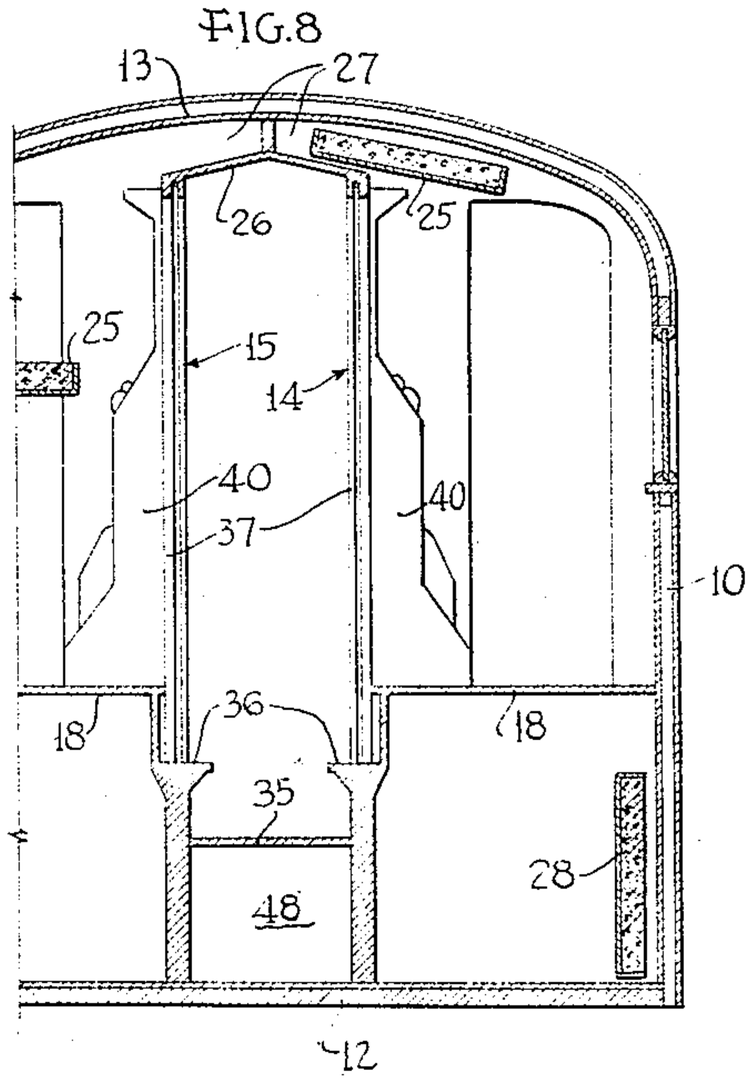


FIG.8



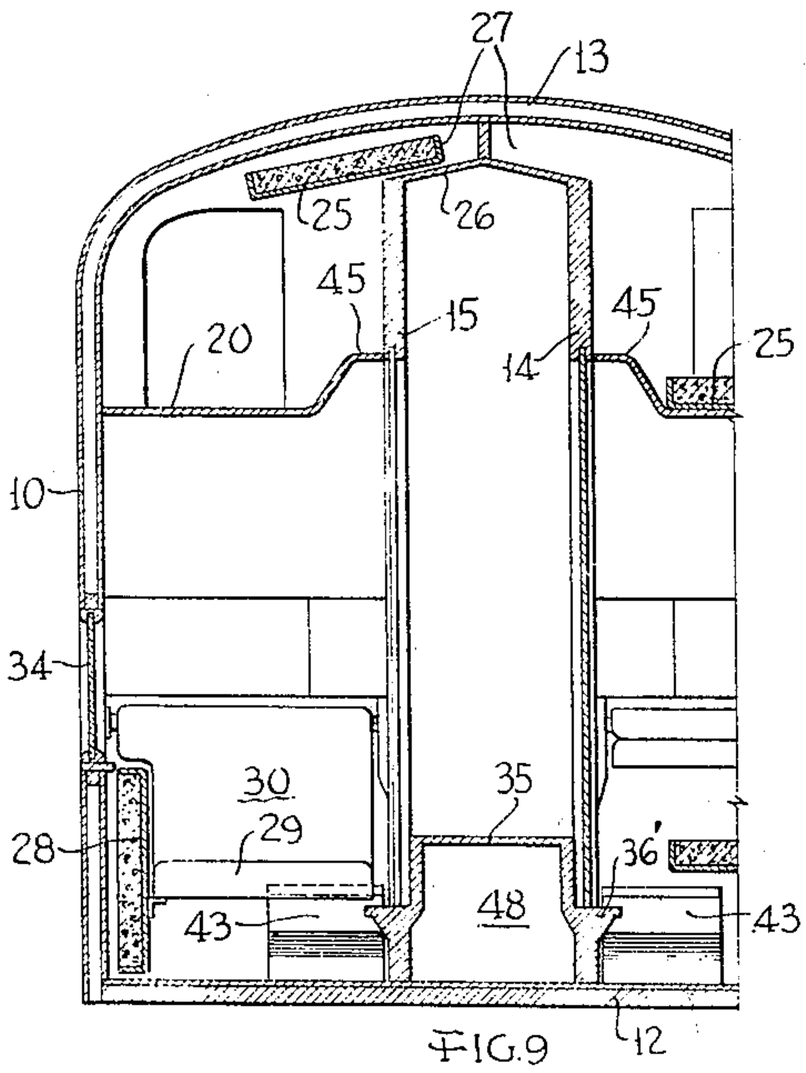


FIG.9

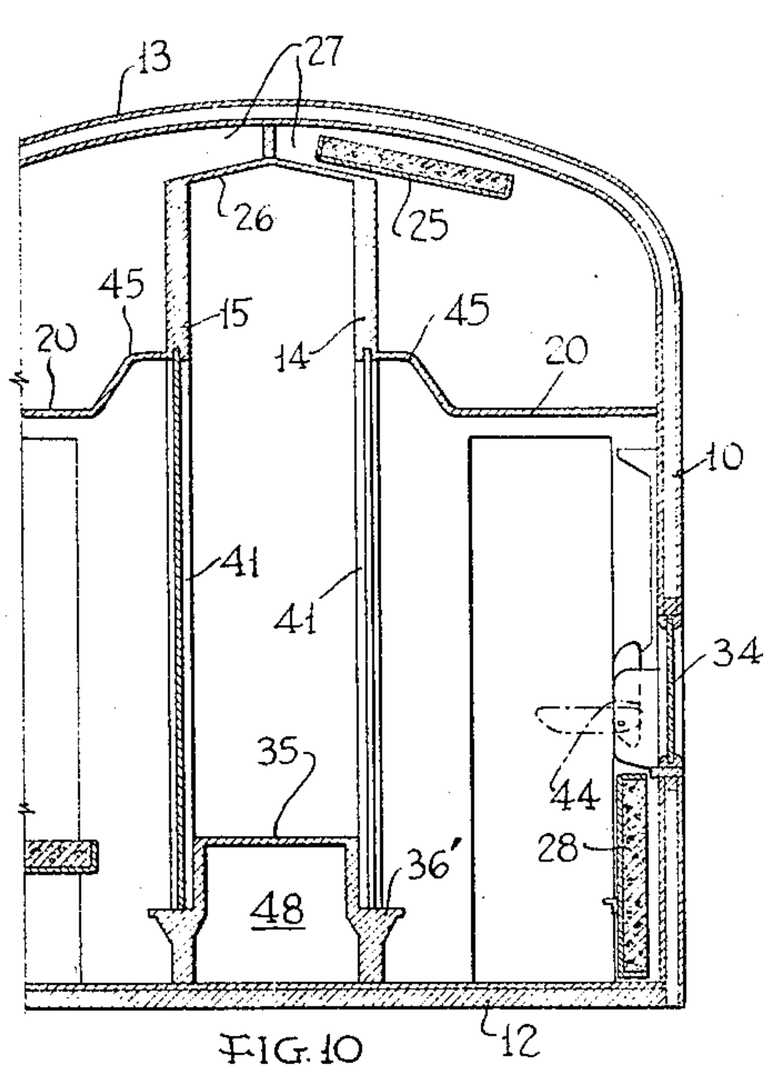


FIG.10

INVENTORS
Carolus L. Eksergian
Michael Watter

BY Maurice L. Crews

ATTORNEY

Patented Apr. 10, 1951 2,548,293

UNITED STATES PATENT OFFICE

2,548,293

SLEEPING CAR WITH SUPERPOSED ROOMS

Carolus L. Eksergian, Media, and Michael Watter, Philadelphia, Pa., assignors to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Application April 29, 1948, Serial No. 24,034

6 Claims. (Cl. 105—315)

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The invention relates to railway sleeping cars and particularly to such cars in which single-occupancy rooms are arranged with their longer dimension in plan extending longitudinally of the car and on both sides of a central aisle of the car.

It is an object of the invention to arrange the rooms in such a car so that a maximum number of rooms may be accommodated in a given car length, and this without, or at least without materially, increasing the height of the car above the normal car height.

This object is achieved in large part by making the longitudinal dimension of the rooms not materially greater than the length of a full-length bed when the latter is disposed in horizontal use position, and more particularly, by arranging two such rooms in substantially directly superposed relation to form a unit of a series of such units arranged longitudinally of the car on both sides of the aisle. The wall separating the two superposed rooms is preferably provided with two vertical jogs or offsets which divide each room lengthwise into sections of differing heights, namely, a standing-height section, a sitting-height section and a less-than-sitting-height section. This arrangement brings the standing-height section of one room into direct vertical alignment with or, in the vertical projection of, the less-than-sitting-height section of the other and the sitting-height sections of the two rooms, in similar vertical alignment. Since the sitting height is relatively small, as compared with the standing height, with the rooms so arranged, the necessary standing height in the rooms can be attained without adding materially to the normal height of the car. At the same time, if such unit pairs of rooms are extended for the length of the car and on both sides of the aisle, the maximum number of such rooms capable of being inserted in a car with normal lockers and general annex provisions, and of the normal length of 85 ft. between bumpers, may be 44, a number greatly in excess of the such single-occupancy rooms heretofore provided on sleeping cars.

The arrangement is also designed to permit fitting out the rooms with suitable seats and beds, toilets, washbasins, etc., to make the rooms equally comfortable for day and/or night travel.

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

In the drawings,

Figure 1 is a sectional plan view through a portion of a railway car equipped with the invention, having a series of superposed rooms on both sides of the center aisle, the line of section being taken substantially along the line 1—1 of Figures 3, 4, 5 and 6 through the upper rooms, the rooms at the top of the view being shown made up for daytime use and the rooms at the bottom being shown made up for nighttime use;

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Figure 2 is a view similar to Figure 1, the section being taken through the lower rooms and substantially along the line 2—2 of Figures 3, 4, 5 and 6;

Figure 3 is a vertical longitudinal sectional view through the rooms at one side of the aisle locking toward the car side wall, the section being taken substantially along the line 3—3 of Figures 1 and 2;

Figure 4 is a view similar to Figure 3 through the rooms at the other side of the aisle looking toward the car side wall, the section being taken substantially along the line 4—4 of Figures 1 and 2;

Figure 5 is a central longitudinal vertical sectional view through the portion of the car shown in Figures 1 and 2, the section being taken substantially along the line 5—5 of Figures 1 and 2;

Figure 6 is a vertical longitudinal sectional view through the rooms at one side of the aisle looking toward the aisle, the section being taken substantially along the line 6—6 of Figures 1 and 2; and

Figures 7, 8, 9 and 10 are partial vertical transverse sectional views, the sections being taken on the lines 7—7, 8—8, 9—9 and 10—10, respectively, as indicated in Figures 1 to 6, inclusive.

In the drawings, which are more or less diagrammatic, the car body side walls are designated 10 and 11, the floor 12, the roof 13, and the walls flanking the center aisle 14 and 15. The rooms are shown arranged in longitudinal series on both sides of the center aisle. Each series is composed of units designated A, B, C and D, each unit being constituted of an upper and a lower room disposed in substantially vertical alignment. The units are separated longitudinally by transverse walls 16 which form the end walls of the adjacent rooms and interconnect the longitudinal aisle wall with the adjacent longitudinal car side wall.

Since the units are similar, except that they are reversely arranged alternately, as is clear from the showing in Figures 3 and 4, a description of one will suffice for an understanding of the entire arrangement.

Each unit pair of rooms is defined by the longi-

tudinal car side wall, as 10, and the adjacent longitudinal extending aisle wall, as 14, and the spaced transverse walls 16 interconnecting said side and aisle walls. To provide a minimum height of the unit between the floor 12 and the roof 13, the upper and lower rooms of the unit are separated by a generally horizontally extending dividing wall or partition 17 which forms the ceiling for the lower room and the floor for the upper room.

The wall or partition 17 is preferably formed with a double job to provide sections of different heights lengthwise of the rooms. It has a lower horizontal portion 18 extending longitudinally inwardly from the adjacent transverse wall 16 a distance sufficient to form standing space in the upper room, an intermediate horizontal portion 19 of a lengthwise extent sufficient to receive a seat thereon and an upper horizontal portion 20 extending longitudinally inwardly from the opposite transverse wall 16 and providing standing-height space for the lower room. A generally vertically extending portion 21 interconnects the adjacent ends of the lower and intermediate horizontal portions and another generally vertical but inclined portion 22 interconnects the adjacent ends of the intermediate and upper horizontal portions.

With this arrangement, it will be seen that each room of the superposed pair of rooms is divided lengthwise into sections corresponding generally to the length of the vertically offset horizontal portions 18, 19 and 20 of the separating partition, that is, into three sections of different height, namely, a standing-height section, an intermediate sitting-height section and a less-than-sitting-height section, and the sitting-height sections of the two rooms are superposed or are in substantially vertical alignment, while the standing-height section of one room is in substantially vertical alignment with the less-than-sitting-height section of the other.

Each room is equipped with the necessary accessories for day and night travel in comfort and with assurance of privacy, if desired.

Referring to Figure 3, it will be seen that the upper room is equipped with a seat 23 disposed on the intermediate horizontal portion 19, and a back 24 for this seat rests against the generally vertical, inclined portion 22 of the partition 17. As shown, the inclined portion 22 is of a height sufficient to receive the entire height of the seat back below its top, so that the seat and seat back may remain in place when the room is converted for nighttime use. The room also contains a bed 25, which is preferably pre-made and of fixed length, extending substantially the length of the room, which is stowed adjacent the roof ceiling, see Figures 6 to 10, adjacent the aisle when the room is made up for daytime occupancy.

As shown, the aisle ceiling 26 is spaced from the ceiling of the roof 13 to provide a recess 27 into which the inner margin of the bed may be received to provide greater head clearance in the room.

When the upper room is made up as a bedroom, the bed 25 is brought from its stowed position to the horizontal use position, shown in Figure 4 and at one side of each of Figures 7 to 10, in which one end thereof rests upon the upper horizontal portion 20 of the partition 17 and the other end is supported by suitable means, not shown, on the opposite transverse partition 16. Any suitable means for moving the bed 25 between its use and stowed position, such for example, as that shown in copending application Serial No. 762,920 of John C. Lyon, filed July 23, 1947, and entitled "Berth Operating Means for Railway Sleeping Cars," may be provided.

The lower room, when made up for daytime occupancy, has its full-length made-up bed 28 stowed along the car side wall, see Figures 2, 3 and 7 to 10, inclusive, and a longitudinally facing seat 29 and seat back 30 therefor are arranged therein, see Figure 3, so as to underlie the intermediate horizontal portion 19 of the partition 17, this seat and seat back facing oppositely to the seat in the upper room. As shown, the seat 29 is supported at its outer margin by a bracket 29' secured to the bottom of the bed and at the inner margin by a hopper 43.

For nighttime occupancy, the cushion of seat 29 and the seat back 30, which are hinged together at 31, may be collapsed and swung about the pivot 32 to a stowed position, shown in Figure 4, under the lower horizontal portion 18 of the partition 17. In this position, they may be secured by a latch 33. This seat operation is not claimed herein but forms the subject matter of a separate application. When the seat and seat back are in this stowed position, the bed 28 may be moved to the horizontal use position shown in Figure 4 and there suitably secured in place. The means for moving the bed 28 between stowed and use positions may be any suitable means, such as that shown for example in U. S. Patent No. 2,504,769, April 18, 1950, and entitled "Sleeping Car Arrangement."

Each room is provided with a large window 34 suitably arranged in the car side wall to provide a good view from the seat in the room.

The upper and lower rooms are made substantially equally accessible from the aisle by elevating the aisle floor 35, as shown in Figures 5 and 7 to 10, to about midway between the floor 12 of the lower room and the standing floor portion 18 of the upper room, making each room accessible from the aisle by a step, as 36, for the upper room and 36' for the lower room.

For the upper room, a doorway 37 is arranged in the aisle wall some distance from the transverse wall 16 separating it from an adjoining upper room, this doorway being closed by a sliding door 38. To facilitate entrance from this doorway into the room, the vertical wall 21 is longitudinally offset, as shown at 39, between the seat and the adjacent margin of the door opening in the aisle wall.

As is clearly shown in Figures 1 and 2, the beds and seats terminate short of the aisle wall on their inner margins to allow space for standing to operate the bed, and in the upper room to provide space in the corner between the door opening and the adjacent transverse wall 16 for a combination cabinet, including a folding hopper and folding washbasin, designated generally by the numeral 40.

The lower room has a doorway 41 from the aisle adjacent the standing-room end thereof, this doorway also being closed by a sliding door 42. The aisle wall is of a thickness which permits the doors of the lower and upper rooms to move in different planes, so that parts thereof which overlap in the open position will not interfere with each other.

The hopper 43 of the lower room is conveniently located under the seat cushion 29 rendering it readily accessible by lifting the seat cushion, as shown at the right in Figure 6. When the

room is made up for nighttime occupancy, access to the hopper is readily had by moving the bed to an intermediate position, as in one of the rooms at the bottom of Figure 2. In the lower room, the folding washbasin and cabinet combination 44 may be conveniently located on the car side wall opposite the standing space of the room, see Figures 2, 4 and 10.

As shown in Figures 1 and 6 and in the sections of Figures 9 and 10, the upper horizontal portion 20 of the dividing partition 17 is formed with an upward offset 45 inwardly of the inner margin of the bed 25 therein, which is arranged opposite the doorway opening into the lower room and provides additional headroom for entering or leaving the lower room.

To enable two adjoining upper and two adjoining lower rooms to be made accessible to each other, a doorway 46 and a folding and sliding door 47 for closing it may be provided, as shown in Figures 1 and 2, in the transverse partitions 16 between each such adjoining pairs of rooms.

The space 48, Figures 7 to 10, between the elevated aisle floor 35 and the car floor 20 may serve to house ventilating ducts, pipes, electrical conduits, etc.

With this arrangement of rooms in a sleeping car, the maximum number of individual rooms is made possible with the least increase in height of the car, and all the rooms are fully equipped for comfortable day and night travel in privacy, if desired.

If the arrangement is used only between the trucks and the floor is dropped down between the trucks, no raising of the roof over the normal roof height is required. If the arrangement is used over the trucks, but a slight increase in roof height is required, such increase as comes well within the clearance requirements of the railroads.

The raised aisle floor shown would obviously be connected at its ends to the car platform by steps. Where the aisle is not raised as shown, the upper rooms would not be as readily accessible as the lower rooms because of the greater number of steps required to reach them from the aisle, but this might be satisfactory under some conditions.

While a specific embodiment of the invention has been herein described in detail, it will be understood that changes and modifications may be made by those skilled in the art without departing from the spirit of the invention.

What is claimed is:

1. In a sleeping car having a central aisle extending longitudinally thereof, a pair of rooms disposed longitudinally of the car adjacent said aisle with one room substantially directly over the other, the wall separating said rooms having upper, intermediate and lower substantially horizontal, vertically offset portions, an upper generally vertically extending portion interconnecting said upper and intermediate horizontal portions and a lower generally vertically extending portion interconnecting said intermediate and lower horizontal portions, said upper and lower vertically extending portions being spaced sufficiently from the opposite ends of the respective rooms to provide standing spaces in said rooms, a seat for the upper room overlying said intermediate horizontal portion, a seat for the lower room underlying said intermediate horizontal portion, a bed for said upper room movable for night travel across its standing space and in overlying relation to said upper, intermediate and lower

horizontal portions so as to extend substantially the full length of the room, and movable to render said upper room standing space available, and a bed for said lower room movable for night travel across the lower room standing space and in underlying relation to said lower, intermediate and upper horizontal portions so as to extend substantially the full length of the room, and movable for day travel to render said lower room standing space available.

2. in a sleeping car having a central aisle extending longitudinally thereof, a pair of rooms disposed longitudinally of the car adjacent said aisle with one room of said pair substantially directly over the other, a jogged wall separating the rooms and dividing each of the rooms lengthwise thereof into three sections differing in height, namely, a standing-height section, a sitting-height section and a less-than-sitting-height section, the sections of one room being arranged reversely to the sections of the other room so as to bring the standing-height section of one room in substantially vertical alignment with the less-than-sitting-height section of the other room and the sitting-height sections of the two rooms in substantially vertical alignment, a seat in each room disposed in the sitting-height section thereof, and a bed in each room movable for night travel to extend horizontally lengthwise across all three sections of the room over substantially the full length of the room, and movable for day travel to render the standing- and sitting-height sections of the room available.

3. In a sleeping car having a central aisle extending longitudinally thereof, a pair of substantially directly superposed rooms disposed longitudinally of the car adjacent said aisle, a double-jogged wall separating the rooms of said pair and dividing each room lengthwise thereof into three sections of progressively differing heights, namely, a standing-height section, a sitting-height section and a less-than-sitting-height section, the sections of one room being arranged reversely to the sections of the other room whereby the sitting-height sections of the two rooms are superposed and the standing-height section of one room and the less-than-sitting-height section of the other are similarly superposed, a seat in the sitting-height section of each room, and a bed in each room movable for night travel across all three sections of the room so as to extend horizontally over substantially the full length of the room, and movable for day travel to render the standing- and sitting-height sections of the room available.

4. In a railway sleeping car having a center aisle, pairs of rooms arranged on opposite sides of the aisle and lengthwise juxtaposed to other pairs of rooms similarly arranged, each pair of rooms being adapted to be made up as sitting rooms or as bedrooms and being substantially directly superposed and divided by a vertically jogged, generally horizontally extending wall into upper and lower rooms, the length of said rooms being not materially greater than necessary to receive a full-length bed therein in horizontal use position, the jogged horizontal wall dividing the space in each room lengthwise thereof into three sections of progressively increasing height, namely, a less-than-sitting-height section, an intermediate sitting-height section and a full standing-height section, the sitting-height sections of the two rooms being substantially directly superposed and seats being disposed therein, and the standing-height section of each one

of the rooms being in substantially superposed relation to the respective less-than-sitting-height section of the other room, and a fixed-length bed in each room normally stowed to free the standing and sitting spaces of the room for day travel and movable to longitudinally extending horizontal position for night travel, in which position it extends substantially the full length of the associated room.

5. In a sleeping car having a central aisle extending longitudinally thereof, a pair of rooms disposed longitudinally of the car adjacent said aisle and with one room substantially directly over the other, a generally horizontally extending wall separating said rooms and having upper, intermediate, and lower horizontal, vertically offset portions, an upper generally vertically extending portion interconnecting said upper and intermediate horizontal portions and a lower generally vertically extending portion interconnecting said intermediate and lower horizontal portions, said upper and lower vertically extending portions being spaced sufficiently from the opposite end walls of the respective rooms to provide standing space in said rooms, a seat for said upper room overlying said intermediate horizontal portion, a seat for said lower room underlying said intermediate horizontal portion, a bed for said upper room movable for night travel across the upper room standing space so as to extend substantially the full length of the room and movable for day travel to render said upper room standing space available, and a bed for said lower room movable for night travel across the lower room standing space so as to extend substantially the full length of the room and movable for day travel to render the lower room standing space available.

6. In a railway sleeping car, a pair of substantially directly superposed rooms arranged between longitudinally extending center aisle and car side walls and spaced transverse walls interconnecting said aisle and car side walls, a generally horizontally extending partition interconnecting said aisle, car side and transverse walls, separating said rooms and providing a ceiling for the lower room and a floor for the upper room, said partition being vertically offset to provide three sections, lengthwise of each room, of different heights, namely, an end section, adjacent one of said transverse walls, of standing height, an intermediate section of sitting height, and an end section, adjacent the other transverse wall, of less-than-sitting-height, the standing-height section of one of the rooms being arranged substantially in the vertical projection of the less-than-sitting height section of the other room and the sitting-height section of one room being substantially in the vertical projection of the similar section of the other room, a seat in each room disposed in the sitting-height section thereof, the seat in the upper room being disposed on the offset portion of the floor thereof adjacent the standing-height floor thereof, and fixed-length beds, one in each room, normally stowed to clear the sitting and standing spaces of the respective rooms and movable to horizontal use position extending across said spaces and over substantially the full length of the respective rooms.

CAROLUS L. EKSERGIAN.
MICHAEL WATTER.

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