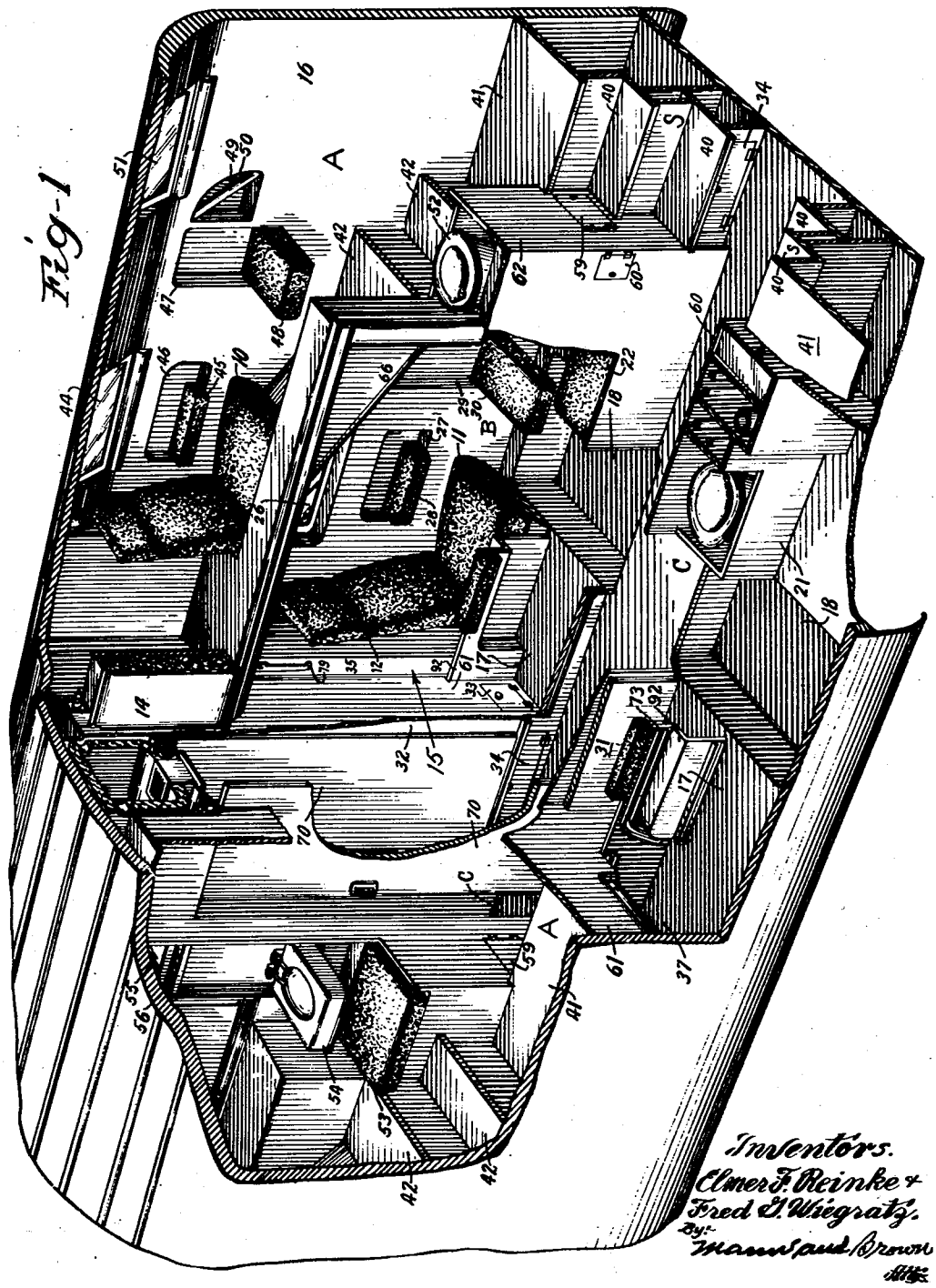
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SLEEPING CAR

Filed Jan. 25, 1947 10 Sheets-Sheet 1

Fig-1



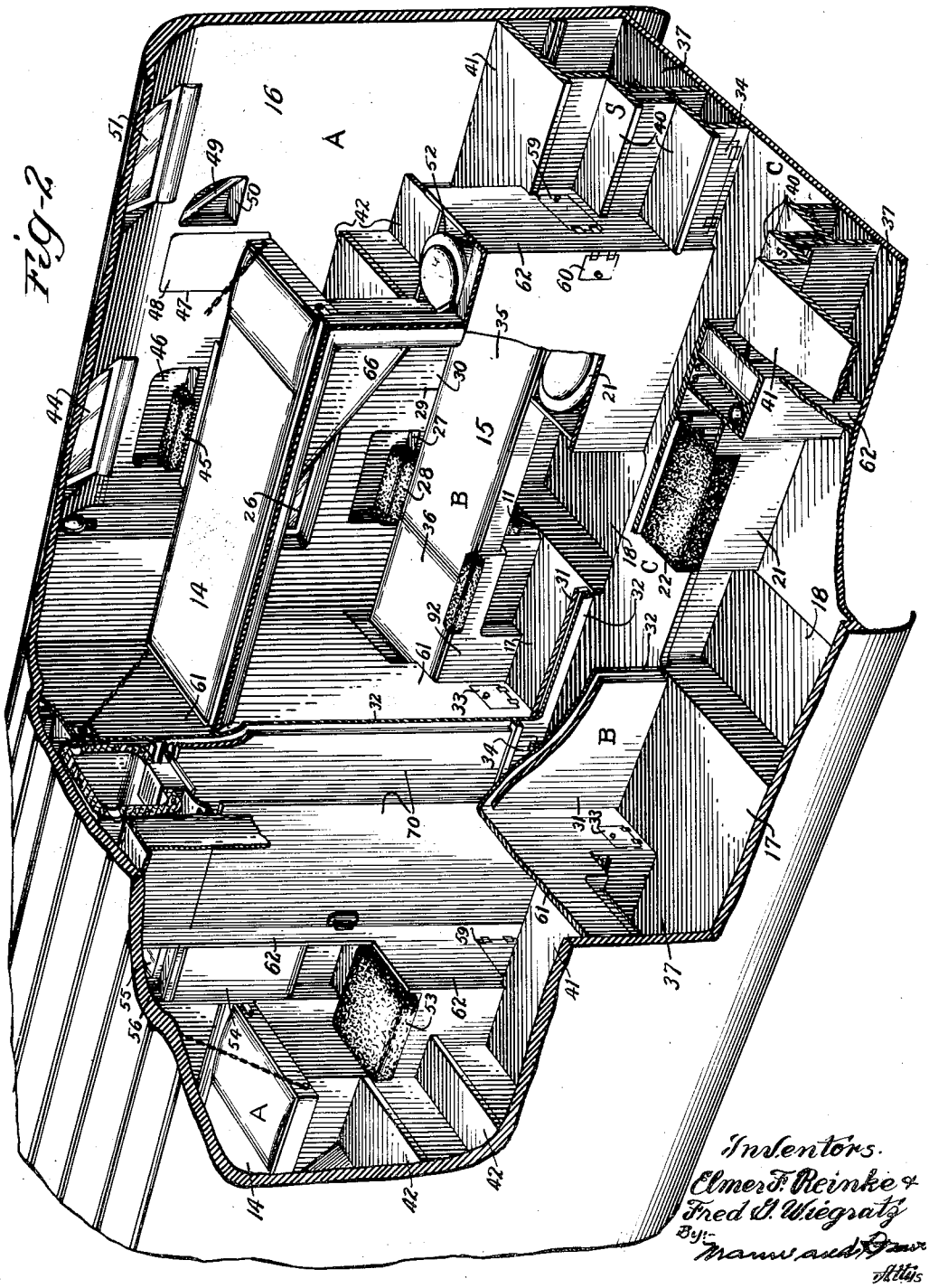
Inventors.
Elmer F. Reinke &
Fred L. Wiegratz.
By: Marrison and Brown
Attys.

Sept. 11, 1951 E. F. REINKE ET AL 2,567,894

SLEEPING CAR

Filed Jan. 25, 1947 10 Sheets-Sheet 2

Fig-2



Inventors.
Elmer F. Reinke &
Fred O. Wiegratz
By: Marrs and Dawson
Attys

Sept. 11, 1951 E. F. REINKE ET AL 2,567,894

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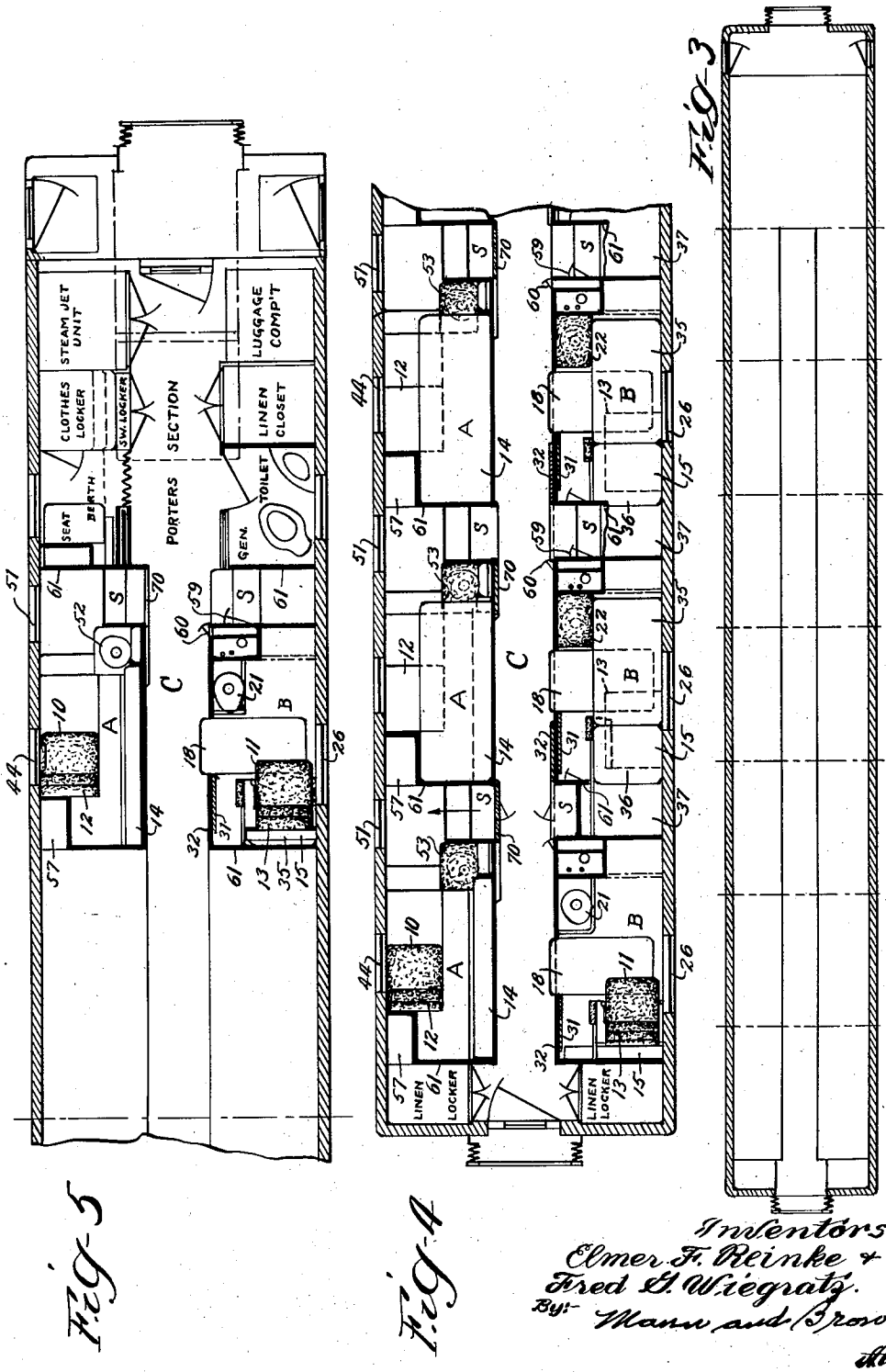


Fig-5

Fig-4

Fig-3

Inventors.
Elmer F. Reinke &
Fred G. Wiegratz.
By: Mann and Brown
Attys.

Sept. 11, 1951 E. F. REINKE ET AL 2,567,894

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Filed Jan. 25, 1947 10 Sheets-Sheet 4

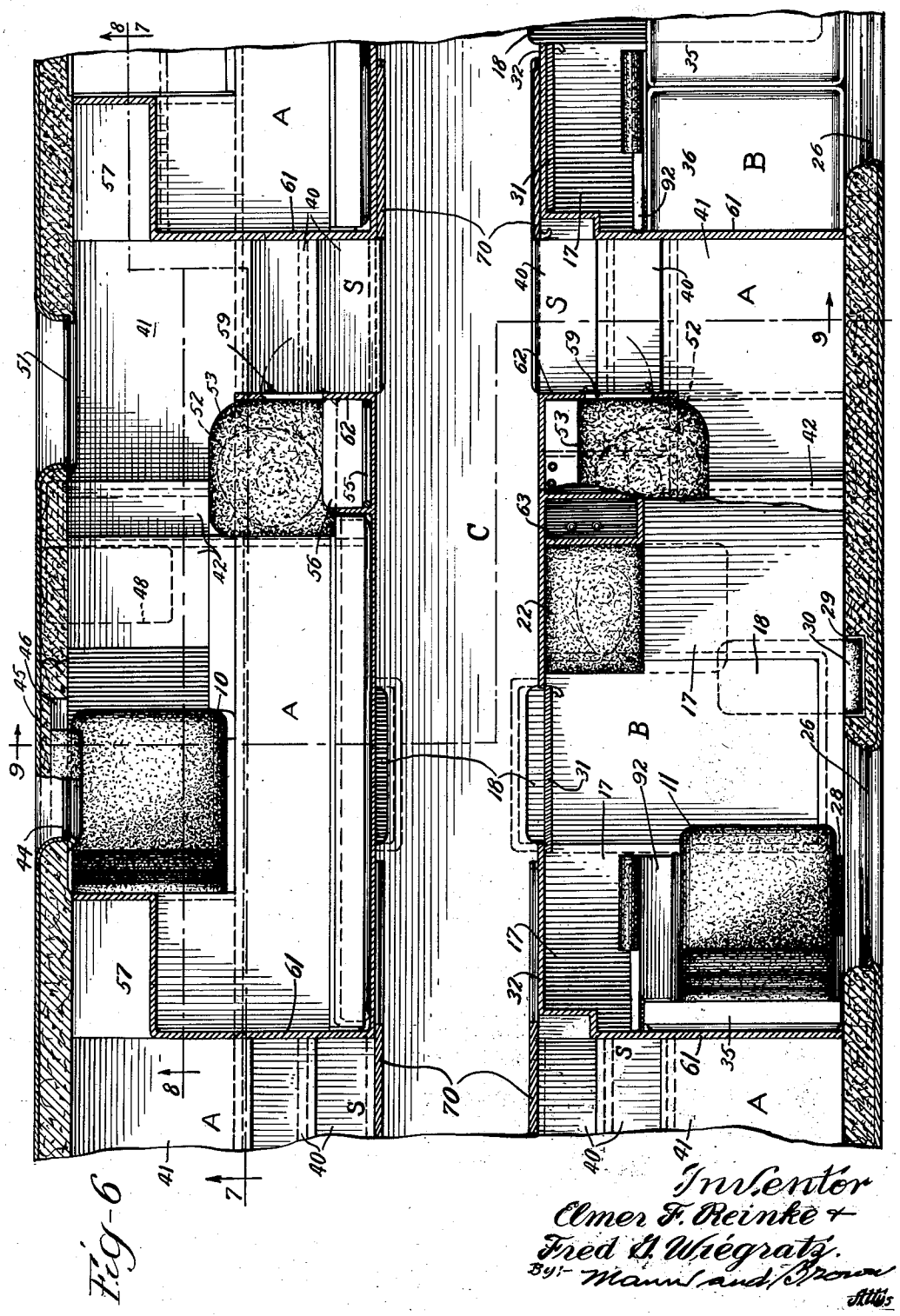


Fig-6

Inventor
Elmer F. Reinke &
Fred A. Wiegratz.
By: Mann and Brown
Attys

Sept. 11, 1951 E. F. REINKE ET AL 2,567,894

SLEEPING CAR

Filed Jan. 25, 1947 10 Sheets-Sheet 5

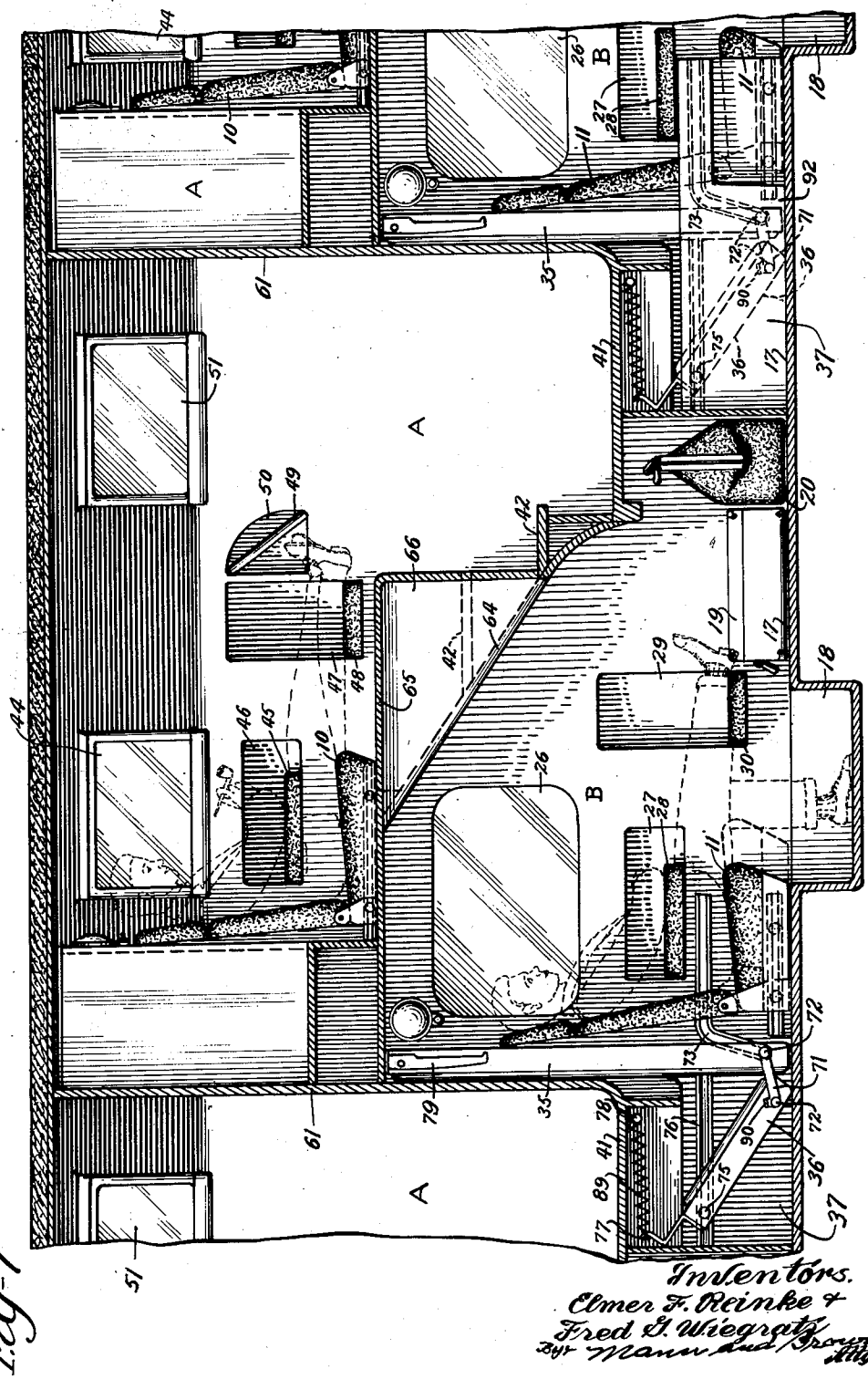


Fig-7

Inventors.
Elmer F. Reinke &
Fred G. Wiegratz
By Mann and Brown
Attys

Sept. 11, 1951 E. F. REINKE ET AL 2,567,894

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Filed Jan. 25, 1947 10 Sheets-Sheet 6

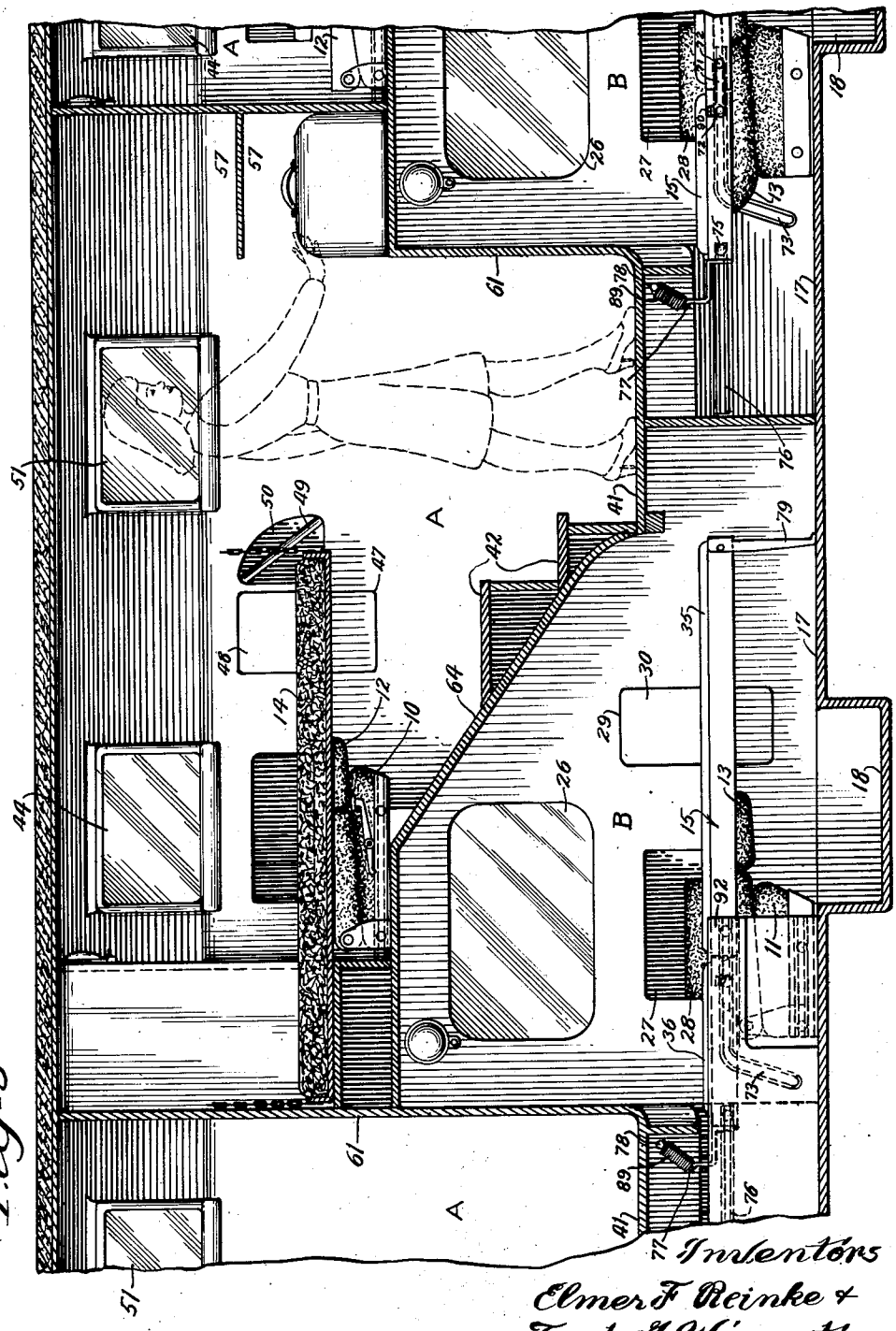


Fig-8

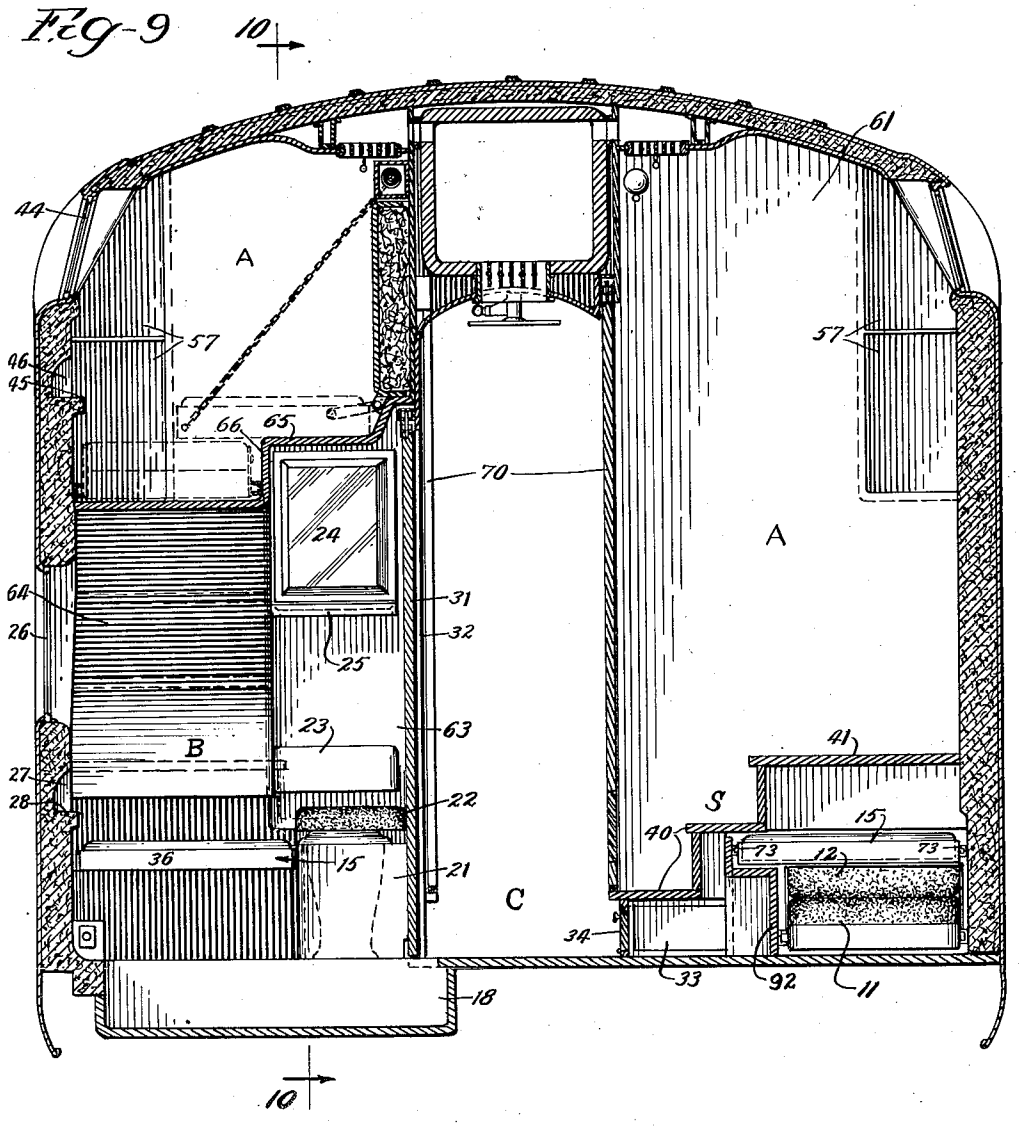
Inventors
Elmer F. Reinke &
Fred J. Wiegratz.
By: Mann and Brown
Attys.

Sept. 11, 1951 E. F. REINKE ET AL 2,567,894

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Filed Jan. 25, 1947 10 Sheets-Sheet 7

Fig-9



Inventors
Elmer F. Reinke &
Fred G. Wiegratz
By- Mann and Brown
Attys.

Sept. 11, 1951 E. F. REINKE ET AL 2,567,894

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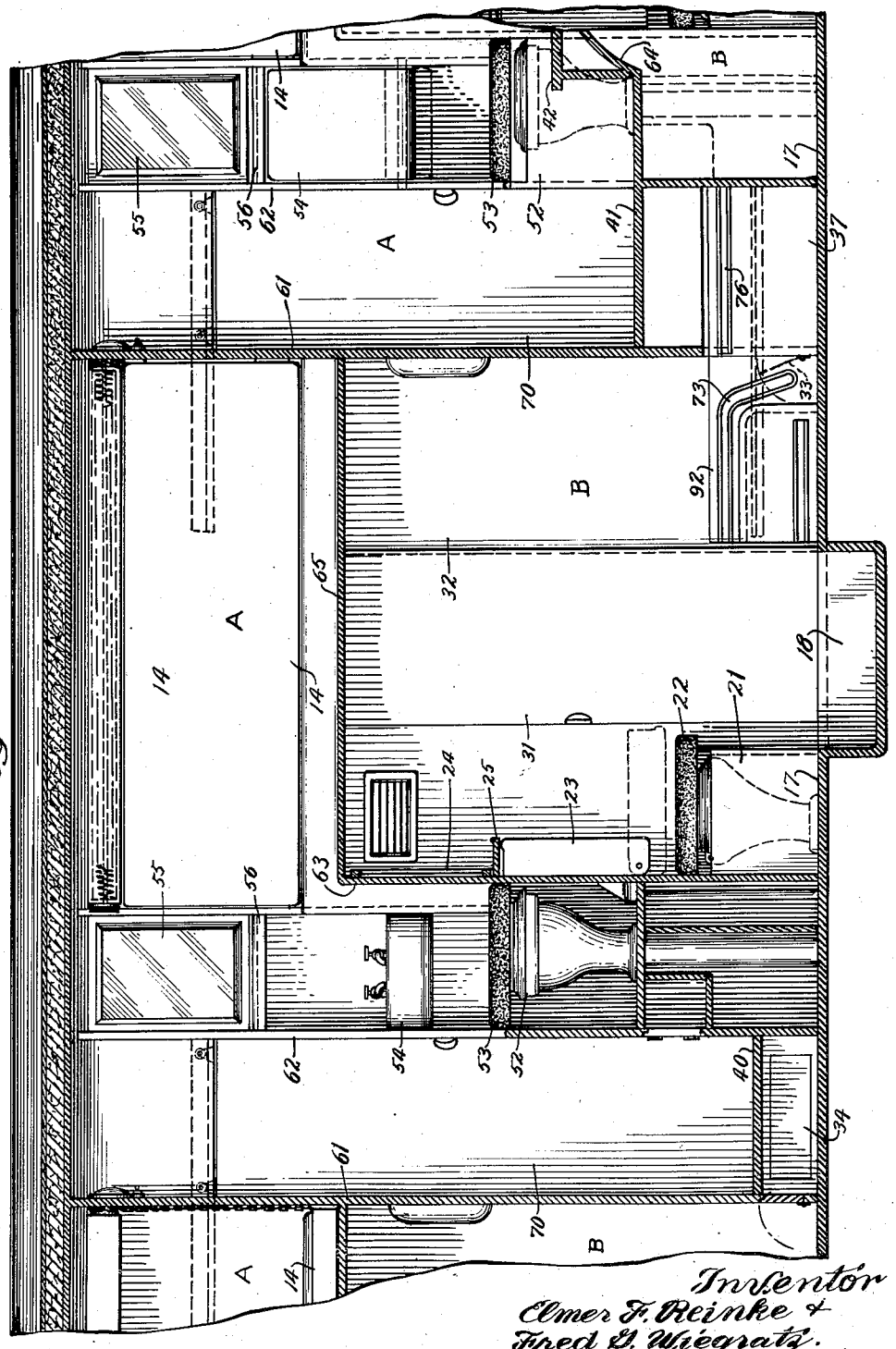


Fig. 10

Inventor
Elmer F. Reinke &
Fred G. Wiegratz.
By:- Mann and Brown
Attys

Sept. 11, 1951 E. F. REINKE ET AL 2,567,894

SLEEPING CAR

Filed Jan. 25, 1947 10 Sheets-Sheet 9

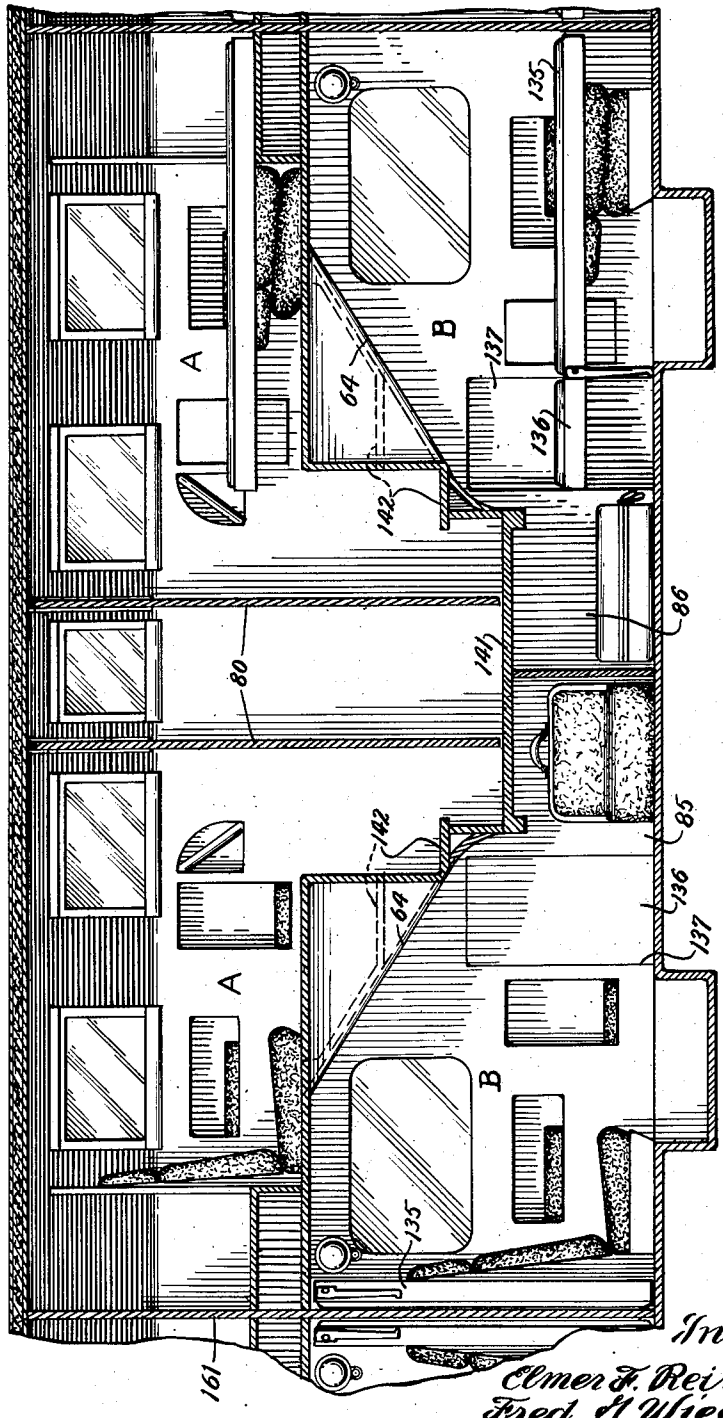


Fig. 11

Inventors
Elmer F. Reinke &
Fred G. Wiegratz.
By Mann and Brown
Attys.

Sept. 11, 1951 E. F. REINKE ET AL 2,567,894

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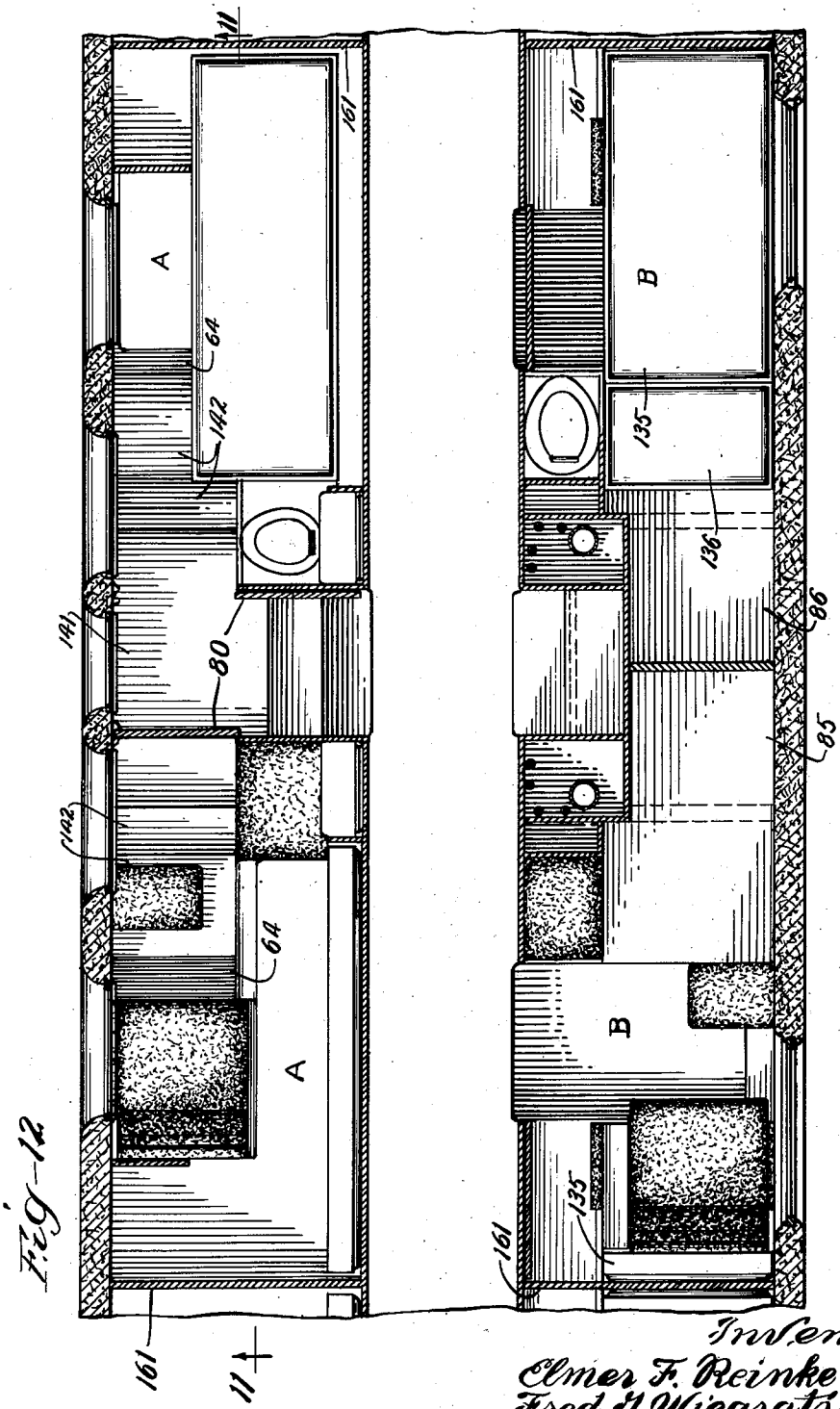


Fig-12

Inventors
Elmer F. Reinke &
Fred D. Wiegratz
By:- Mann and Brown
Attys

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UNITED STATES PATENT OFFICE

2,567,894

SLEEPING CAR

Elmer F. Reinke, Milwaukee, and Fred G. Wiegratz, Wauwatosa, Wis.

Application January 25, 1947, Serial No. 724,368

12 Claims. (Cl. 105—315)

1

This invention relates to passenger cars, and has for its principal object to increase the number of separate accommodations equipped with individual seating, sleeping, and toilet facilities that can be gotten within a given length of car.

Generally speaking, this is accomplished by providing a compact bedroom-sitting room combination unit of separate upper and lower rooms arranged one above the other along a side wall and an aisle wall of the car defined at corresponding ends by a transverse partition wall and at the opposite ends by spaced transverse partition walls making a passageway for the upper room equipped with steps leading up from the aisle.

Such a basic compact unit combination can be fitted into a car with porter's accommodations and other necessary equipment for giving the greatest number of separate accommodations that have yet been provided in the customary over-all length of passenger car. Such a car is known as a Duplex Tepeette car. The basic compact unit combinations may also be fitted in with drawing rooms or compartments, or both, or even with baggage, mail, dining, or other spaces.

In the drawings, Fig. 1 is a perspective view of a portion of a car embodying typical upper and lower rooms on each side of a central aisle, the beds being in out-of-use position and the seats ready for use;

Fig. 2 is a similar view of the same portion of a car with the beds in position for use;

Fig. 3 is a diagrammatic plan view of a Duplex Tepeette car including 14 lower rooms, 14 upper rooms, together with porter's quarters, general toilet, linen lockers and luggage compartments;

Fig. 4 is a plan view of a portion of the left end of Fig. 3 showing 3 upper rooms and 3 lower rooms in a typical arrangement with 2 linen closets next to the left end of the car;

Fig. 5 is a plan view of the right end of Fig. 3, showing upper and lower rooms together with porter's section, general toilet, linen lockers, luggage compartment, etc., in addition to the right end of the car;

Fig. 6 is an enlarged plan view of an intermediate portion of Fig. 3;

Fig. 7 is a longitudinal section taken on the line 7—7 of Fig. 6 and showing the seats ready for use;

Fig. 8 is a vertical section taken on the line 8—8 of Fig. 6 and showing the beds in position for use;

2

Fig. 9 is a transverse section taken on the line 9—9 of Fig. 6;

Fig. 10 is a vertical section taken on the line 10—10 of Fig. 9;

Fig. 11 is a vertical longitudinal section of an alternative form; and

Fig. 12 is a horizontal section of the same.

General description

A general notion of the arrangement of the upper and lower rooms and their furnishings will appear from the perspective views 1 and 2 and the corresponding elevations 7 and 8 in which the upper and lower rooms A and B are shown arranged one above the other at each side of a common corridor or aisle C with a stair S leading from the floor of that corridor into each upper room.

In Figs. 1 and 7, the seats 10 and 11 are ready for use, and the beds are stored away in out-of-use positions, while in Figs. 2 and 8 the seat backs 12 and 13 of the seats are folded down over them, and the beds 14 and 15 are shown in position over the seat backs lengthwise to the car along the side wall 16.

The lower room

The floor 17 of the each lower room is provided with a well 18 extending across the room in front of the seat 11 to provide leg room in front of the seat and by the same token head room beneath the upper room. The well area may be referred to as the lower room standing area.

Beyond the well in front of the seat is a baggage space indicated in Fig. 7 by the suit case 19 and the hand bag 20. In the aisle corner opposite this baggage space, or diagonally opposite to the seat, is an enclosed hopper 21, the hinged lid 22 of the closure forming an auxiliary seat. Above the hopper in the same corner is a folding wash-basin 23 (Figs. 9 and 10), and above the basin are a mirror 24 and a shelf 25.

Adjacent to and above the seat 11, each side wall is provided with a large window 26, and below the window projecting from a niche 27 is an arm rest 28. In front of the arm rest and foldable into and out of the niche 29 is a foot rest 30.

A sliding door 31 for each lower room is movable back and forth along the corresponding aisle wall 32 on suitable anti-friction supports.

A shoe box is reached by passenger's door 33 in the aisle corner alongside of the seat, and the porter serves the box through a porter's door 34 in the aisle wall 32 (Fig. 9).

The bed 15 is in two parts. The major part 35 is stored in an upright position behind the seat 11 and the seat back 13, and the minor part 36 is passed into a chamber 37 under the stair S for an adjacent upper room, or in the bottom of the linen closet, or other space, as the case may be.

In this illustrated embodiment, the major part 35 and the minor part 36 of the bed 15 are articulated by links 71, pivoted at opposite ends to the respective parts of the bed on axes corresponding to the supporting rollers 72, which run in a curved track 73 as the parts move from the position shown in Fig. 7 to the position shown in Fig. 8, or vice versa. Adjacent to the left roller 72, each link 71 has a shoulder 74 to run over the outside of the track 73 and give extra support for the front end of the minor part 36.

The left end of that minor part has an antifriction roller 75 at each side running in a straight track 76, as the bed is moved from in-use position to out-of-use position, and vice versa.

A spring 89, connected to an arm 77 at the left end of the minor part 36 and to a fixed pin 78, assists in moving the bed 15 from out-of-use position to in-use position. In the latter position, the right end of the major part 35 is supported by folding legs 79.

The upper room

The stair S is here shown as including two steps 40, a landing or standing room area 41, and two steps 42. The steps 40 lead crosswise to the car, and the steps 42 lead lengthwise along the side wall of the car. The standing room area 41 for the upper room is of limited size but adequate to permit a person to stand comfortably (Fig. 8). Adjacent to the seat 10 and above it, the side wall is provided with a window 44 beneath which is an arm rest 45 in a niche 46. In front of the seat, foldable into and out of a niche 47, is a foot rest 48. Adjacent to the niche 47 and above the lower step 42 is a short hand rail 49 extending across the niche or auxiliary window 50. Above the landing 42 and in line with the window 44 is a window of the same size 51.

In an aisle corner, accessible from the landing 41 is an enclosed hopper 52, the hinged cover 53 of which serves as an auxiliary seat. Above the hopper is a folding basin 54; above that, a mirror 55 and a shelf 56 (see Fig. 10). In front of the landing 41 and along the side wall 16 is a baggage space 57 which is recessed into the adjacent upper room.

A shoe box beneath the hopper 52 is accessible through a passenger door 59 by the stair S and the porter's door 60 in the aisle wall 32 (Figs. 1 and 2).

The partitions

Corresponding ends of the upper and lower rooms at the rear (left) are defined by a transverse partition wall 61 extending from the aisle wall 32 to the side wall 16. The major portion 35 of the bed in the lower room is stored against this wall behind the seat back 13 (Fig. 7). The minor portion is passed through this wall and into the chamber 37 under the stair of the adjacent room, or in the locker or such like.

The opposite end of the lower room is a somewhat complicated structure, as is also the ceiling of the lower room and the floor of the upper. Actually, there is a transverse partition wall 62 at the rear side of the steps 40, which may be considered the front end of the lower room, although there is a wall 63 (Fig. 10) between the

partition 62 and the hopper 21, the basin 23, and the mirror 24, the intervening space being occupied by the hopper 52, the shoe box for the upper room, and the necessary piping. The partition 62 extends to the roof of the car, but is cut away above the hopper 52 (Fig. 10) and next to the side wall 16 to make clearance for the steps 42, which, as appears in Fig. 8, are on a curved wall 64, which may be considered a part of the floor of the upper room and the ceiling of the lower room adjacent to the side wall. Inwardly from that curved wall 64 and the steps 42 is a horizontal wall 65, which, together with a triangular wall 66, forms the remainder of the ceiling of the lower room. That horizontal wall 65 at the front end is joined (Fig. 10) to the partition 63, which might be considered the wall defining the front of the lower room.

On the right of the stair in Figs. 1 and 2, there is another transverse partition identified as 61, because, although it forms a third partition in the combination unit of separate upper and lower rooms, it is also the rear wall of the next combination unit, or the corresponding wall of the next drawing room, porter's compartment, or other space, as the case may be. When it is the back wall of the next unit combination, it is cut to provide access to the baggage space 57 for the upper room (see Figs. 8 and 9). The seat 10 with its seat back 12 in the upper room will be seen spaced forward from the transverse partition wall 61 to provide room for the baggage space 57. When some other accommodation is in front of the unit combination, there will usually be room available for some such baggage space along the side wall.

In stored position, the bed 14 in the upper room (Fig. 9) is on edge along the aisle wall 32 and over the horizontal ceiling wall 65; and, as shown, it swings about a horizontal axis from that position in Fig. 9 to the position for use in Fig. 2, where it lies flat, lengthwise to the car, spaced from the side wall far enough to permit the seat 10 to be used by the passenger while dressing and undressing.

A sliding door 70 for each upper room is movable back and forth along the aisle wall 32 (Fig. 6) of the next adjacent lower room and across the stair opening over the lower step 40.

The basic unit combination in this illustrative form has the heads of the beds all in the same direction, and permits access to the toilet facilities while the beds are in in-use position. The unit can be fitted in 9′ 6″ length basic floor plan and combined with drawing rooms, compartments, baggage, mail, dining, storage and other spaces according to preference of the designer.

Alternative form

In Figs. 11 and 12, there is shown an alternative form of compact unit combination that can be put into space 8′ 8″ to 9′ long.

Generally speaking, this is made up of two units very like that shown in Figs. 7 and 8, the one at the left corresponding to those figures in general arrangement, and the one at the right being reversed. The two upper rooms A are each equipped with its individual door 80 extending crosswise to the car from the ceiling to platform 141, which is reached by two steps 40, as in the first form. The portion of the platform 141 lying within the adjacent upper rooms constitutes respectively the standing room areas for these rooms, and is adequate although of limited extent. From the platform 141 the steps 142

lead up, as before in drawing Fig. 11. One upper bed or seat is approached by turning left from the platform 141, and the other by turning right from that platform.

The baggage spaces 85 and 86 are under the platform 141 and open into the corresponding lower room B.

The bed for each lower room B is composed of a major part 135 stored along the transverse partition wall 161, as in the first form, and the minor part 136 folds into and out of a niche in the wall 137. The parts of the bed are shown in out-of-the-way position at the left in Fig. 11, and in position for use at the right.

In the interest of brevity, much detail is omitted in this alternative form, but it is deemed within the province of the designer to fill in those details at will.

The toilet facilities are generally indicated in Fig. 12, and will correspond roughly to those described in connection with Figs. 1–10.

We claim:

1. An upper and lower bedroom-sitting room combination for a vehicle comprising separate upper and lower rooms, each convertible from a bedroom having standing room therein to a sitting room and vice versa, said rooms being arranged one above the other in a space bounded on the sides by a vehicle side wall and an aisle wall, and to which access is had through openings in said aisle wall, the rearmost portions of both rooms being substantially in vertical alignment, a seat with a collapsible back mounted in each of said rooms in the rear portion thereof adjacent the vehicle side with the upper seat being substantially in vertical alignment with the lower seat, a horizontal wall in the upper room at or above seat height and forming a shelf extending between said upper seat and the aisle wall and constituting a ceiling wall for the standing room area of the lower room, a downwardly sloping wall adjacent said vehicle side wall and substantially equal in width to the width of the seats separating the upper and lower rooms adjacent said vehicle side wall and having steps on its top surface leading to a platform at the front end of the upper room which constitutes a standing room area for the upper room, a lengthwise bed for the upper room, at least a part of which is movable from an out-of-use vertical position along the aisle wall of the upper room to a horizontal in-use position substantially abutting the rear of said room, over said shelf and adjacent said aisle wall, and a lengthwise bed for the lower room, at least a part of which is movable from an out-of-use vertical position behind the lower seat back to a horizontal position adjacent said vehicle side wall, the length of the upper room being substantially equal to the length of the bed therein when in in-use position plus the extent of the standing room area therein longitudinally of the car, and the length of the lower room being substantially equal to that of said upper room.

2. An upper and lower bedroom-sitting room combination as set forth in claim 1 in which a portion of the bed for the lower room is stored when in out-of-use position in a recess provided in the rear wall of said lower room.

3. An upper and lower bedroom-sitting room combination as set forth in claim 1 in which a portion of the bed for the lower room is stored when in out-of-use position in a recess provided in the vehicle side wall near the front end of said lower room.

4. An upper and lower bedroom-sitting room combination as set forth in claim 1 in which a portion of the bed for the lower room is stored when in out-of-use position in a recess provided in the rear wall of said lower room, said portion having trunnion guides supported by guideways for automatically moving said portion of the bed to in-use position when the remaining portion of said bed is moved to usable position.

5. An upper and lower bedroom-sitting room combination as set forth in claim 1 in which a stairway located forwardly of said lower room leads from said platform to the aisle-way.

6. An upper and lower bedroom-sitting room combination as set forth in claim 1 in which a stairway located forwardly of said lower room leads from said platform to the aisle-way, and in which two groups of toilet facilities are positioned between said stairway and the front end of the lower room, one group being accessible from the platform of the upper room and the other group being accessible from the standing room area of the lower room.

7. An upper and lower bedroom-sitting room combination as set forth in claim 1 in which a stairway located forwardly of said lower room leads from said platform to the aisle-way, and in which two groups of toilet facilities are positioned between said stairway and the front end of the lower room, one group being accessible from the platform of the upper room and the other group being accessible from the standing room area of the lower room, both of said groups being usable while the beds of said two rooms are either in out-of-use position or in-use position.

8. An upper and lower bedroom-sitting room combination as set forth in claim 1 in which the seat in the upper room is slightly forward of the seat in the lower room, thereby to provide a storage space between the upper seat and said rearmost portion of said upper room accessible from the rear exterior of said upper room, and being located adjacent to the side wall of the car and having its width substantially equal to the difference between the width of said upper room and the width of said upper bed.

9. A vehicle having a plurality of adjacent bedroom-sitting room combination units, each unit comprising the combination as set forth in claim 1, and in which the upper seat is positioned slightly forward of the lower seat thereby to provide a storage space between the back of said upper seat and the rearmost portion of the upper room accessible from the upper room of the rearwardly adjacent combination unit, said storage space being located adjacent to the side wall of the car and having its width substantially equal to the difference between the width of said upper room and the width of said upper bed.

10. A vehicle having a plurality of adjacent bedroom-sitting room combination units, each unit comprising the combination as set forth in claim 1, and in which one of said combination units is turned end for end, whereby the front portions of said adjacent combination units are in juxtaposition, a stairway leading from the aisle to the upper standing room area of said combination units and doors separating the stairway from the upper standing room areas of said adjacent combination units.

11. An upper and lower bedroom-sitting room

combination for a vehicle comprising separate upper and lower rooms, each convertible from a bedroom having standing room therein to a sitting room and vice versa, said rooms being arranged one above the other in a space bounded on the sides by a vehicle side wall and an aisle wall, and to which access is had through openings in said aisle wall, the rearmost portions of both rooms being substantially in vertical alignment, a seat with a collapsible back mounted in each of said rooms in the rear portion thereof adjacent the vehicle side with the upper seat being substantially in vertical alignment with the lower seat, a horizontal wall in the upper room at or above seat height and forming a shelf extending between said upper seat and the aisle wall and constituting a ceiling wall for the standing room area of the lower room, a downwardly sloping wall adjacent said vehicle side wall and substantially equal in width to the width of the seats separating the upper and lower rooms adjacent said vehicle side wall and having steps on its top surface leading to a platform at the front end of the upper room which constitutes a standing room area for the upper room, a lengthwise bed for the upper room, at least a part of which is movable from an out-of-use vertical position along the aisle wall of the upper room to a horizontal in-use position substantially abutting the rear of said room, over said shelf and adjacent said aisle wall, and a lengthwise bed for the lower room, at least a part of which is movable from an out-of-use vertical position behind the lower seat back to a horizontal position adjacent said vehicle side wall, and luggage spaces for said rooms, one such space being accessible from the platform of said upper room and another such space being located beneath the platform of the upper room and communicating with the interior of the lower room, the length of the upper room being substantially equal to the length of the bed therein when in in-use position plus the extent of the standing room area therein longitudinally of the car, and the length of the lower room being substantially equal to that of said upper room.

12. An upper and lower bedroom-sitting room combination for a vehicle comprising separate upper and lower rooms, each convertible from a bedroom having standing room therein to a sitting room and vice versa, said rooms being

arranged one above the other in a space bounded on the sides by a vehicle side wall and an aisle wall, and to which access is had through openings in said aisle wall, the rearmost portions of both rooms being substantially in vertical alignment, a seat with a collapsible back mounted in each of said rooms in the rear portion thereof adjacent the vehicle side with the upper seat being substantially in vertical alignment with the lower seat, a horizontal wall in the upper room at or above seat height and forming a shelf extending between said upper seat and the aisle wall and constituting a ceiling wall for the standing room area of the lower room, a downwardly sloping wall adjacent said vehicle side wall and substantially equal in width to the width of the seats separating the upper and lower rooms adjacent said vehicle side wall and having steps on its top surface leading to a platform at the front end of the upper room which constitutes a standing room area for the upper room, a lengthwise bed for the upper room, at least a part of which is movable from an out-of-use vertical position along the aisle wall of the upper room to a horizontal in-use position substantially abutting the rear of said room, over said shelf and adjacent said aisle wall, and a lengthwise bed for the lower room, at least a part of which is movable from an out-of-use vertical position behind the lower seat back to a horizontal position adjacent said vehicle side wall, and foot rests for the upper and lower seats foldable into the vehicle side wall, the length of the upper room being substantially equal to the length of the bed therein when in in-use position plus the extent of the standing room area therein longitudinally of the car, and the length of the lower room being substantially equal to that of said upper room.

ELMER F. REINKE.
FRED G. WIEGRATZ.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
2,208,679	McCarroll	July 23, 1940
2,364,595	Tulley et al.	Dec. 5, 1944