

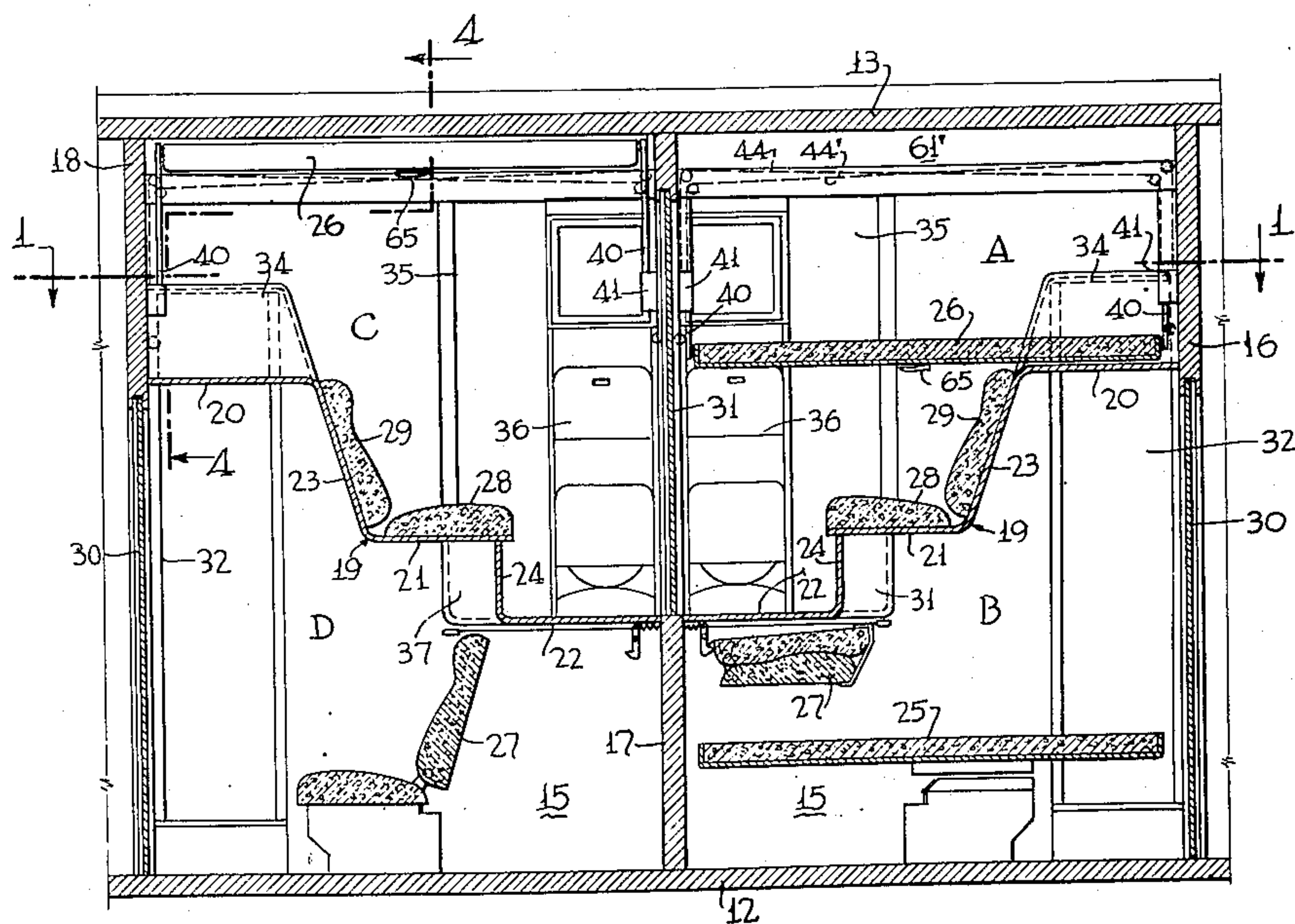
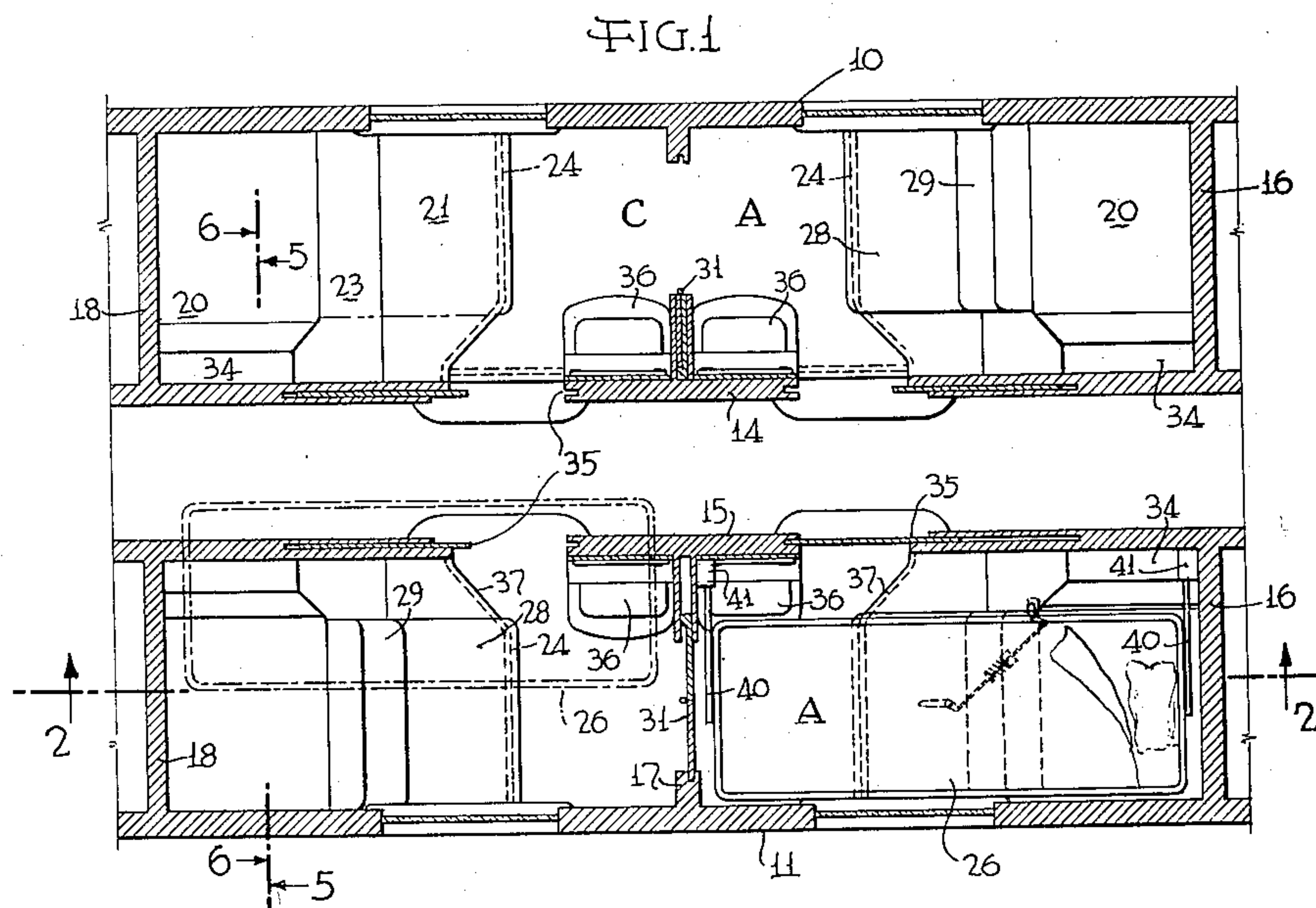
Feb. 17, 1953

M. WATTER
ROOM WITH MOVABLE BED FOR RAILWAY
SLEEPING CARS OR THE LIKE

2,628,366

Filed Sept. 15, 1948

4 Sheets-Sheet 1



INVENTOR.

Michael Watter.

BY

Maurice A. Crews

ATTORNEY

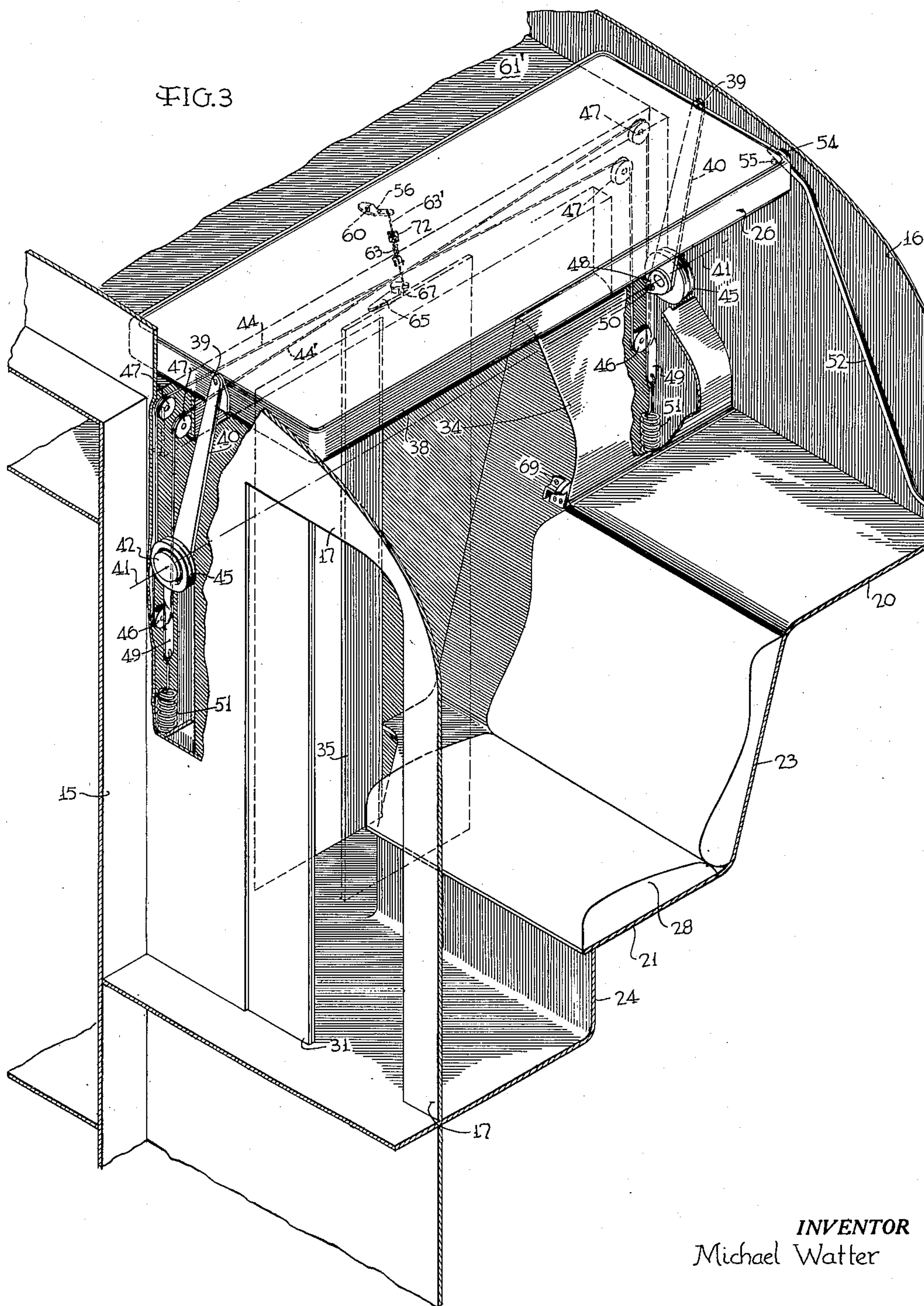
Feb. 17, 1953

M. WATTER
ROOM WITH MOVABLE BED FOR RAILWAY
SLEEPING CARS OR THE LIKE

2,628,366

Filed Sept. 15, 1948

4 Sheets-Sheet 2



INVENTOR
Michael Watter

BY *Maurice A. Crews*
ATTORNEY

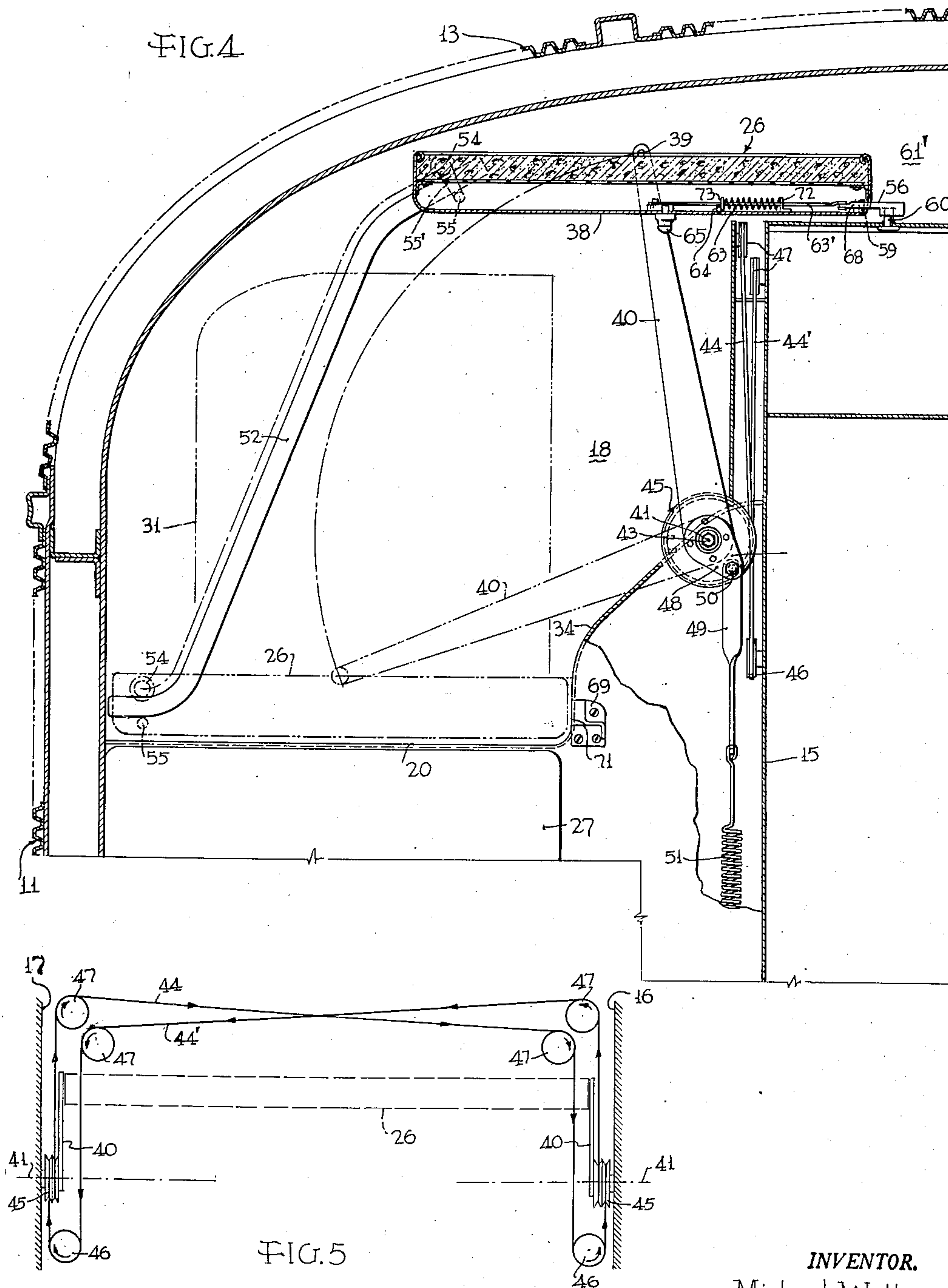
Feb. 17, 1953

M. WATTER
ROOM WITH MOVABLE BED FOR RAILWAY
SLEEPING CARS OR THE LIKE

2,628,366

Filed Sept. 15, 1948

4 Sheets-Sheet 3



INVENTOR.
Michael Watter.
BY
Maurice A. Crewd
ATTORNEY

Feb. 17, 1953

M. WATTER
ROOM WITH MOVABLE BED FOR RAILWAY
SLEEPING CARS OR THE LIKE

2,628,366

Filed Sept. 15, 1948

4 Sheets-Sheet 4

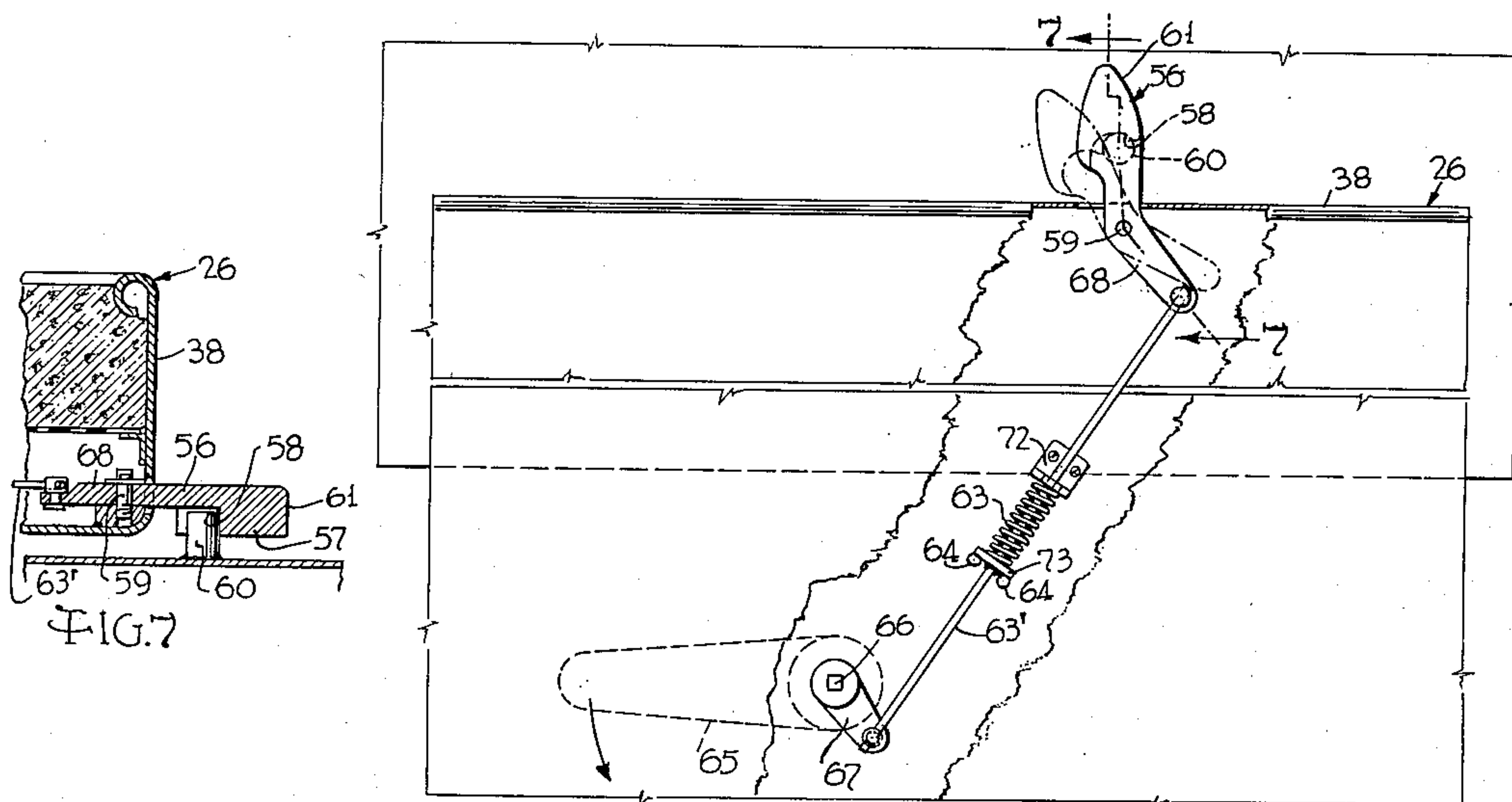


FIG. 6

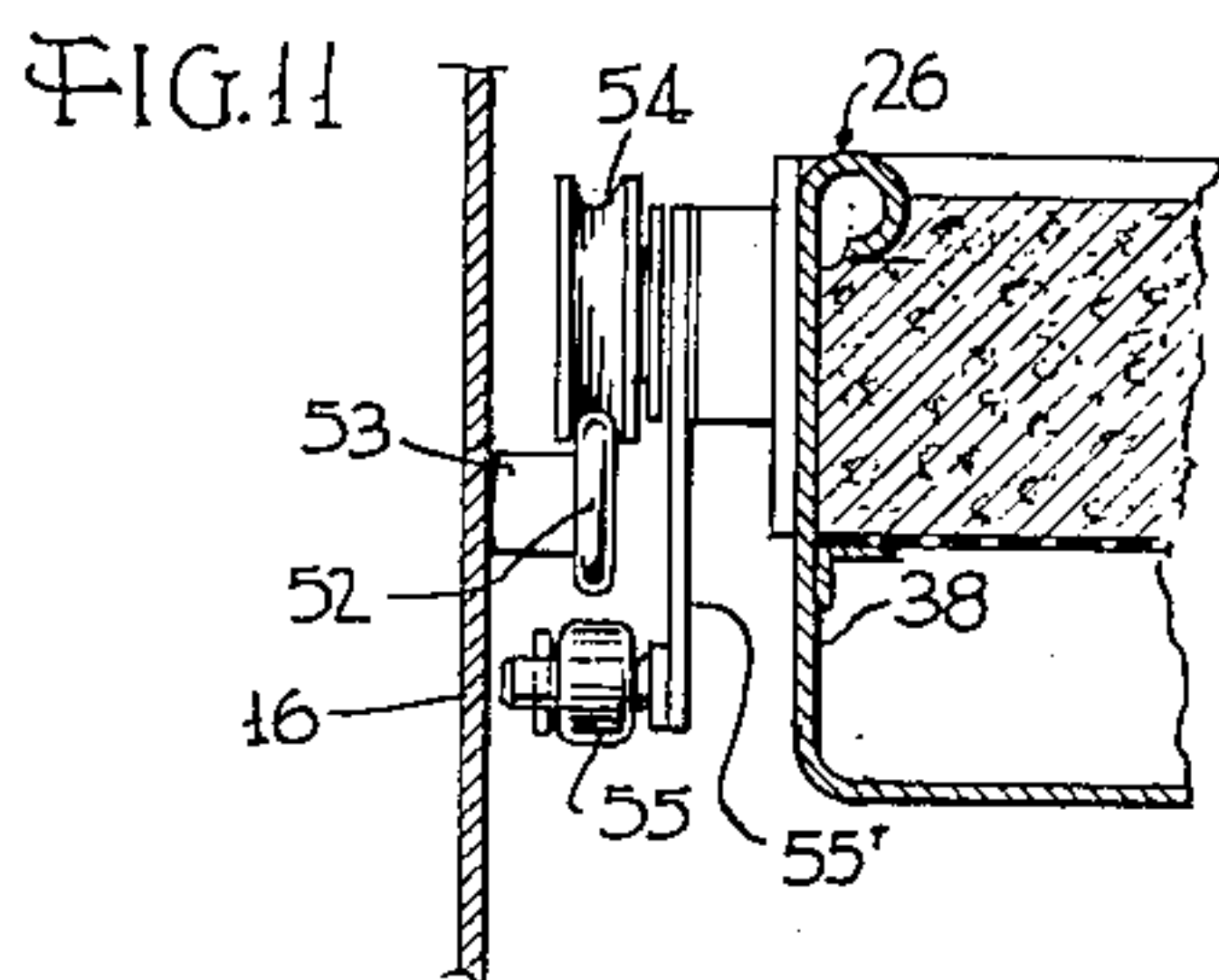


FIG. 11

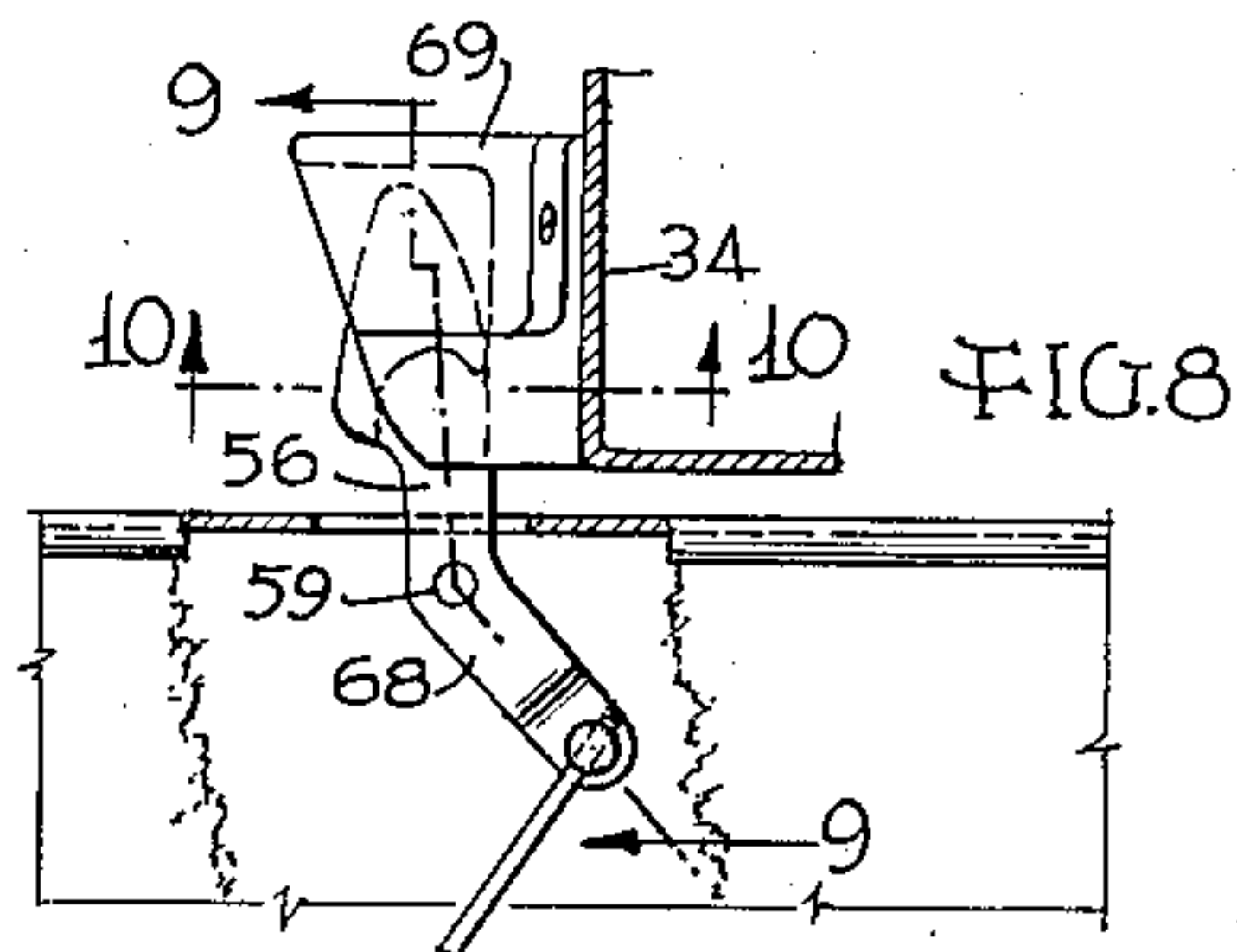


FIG. 8

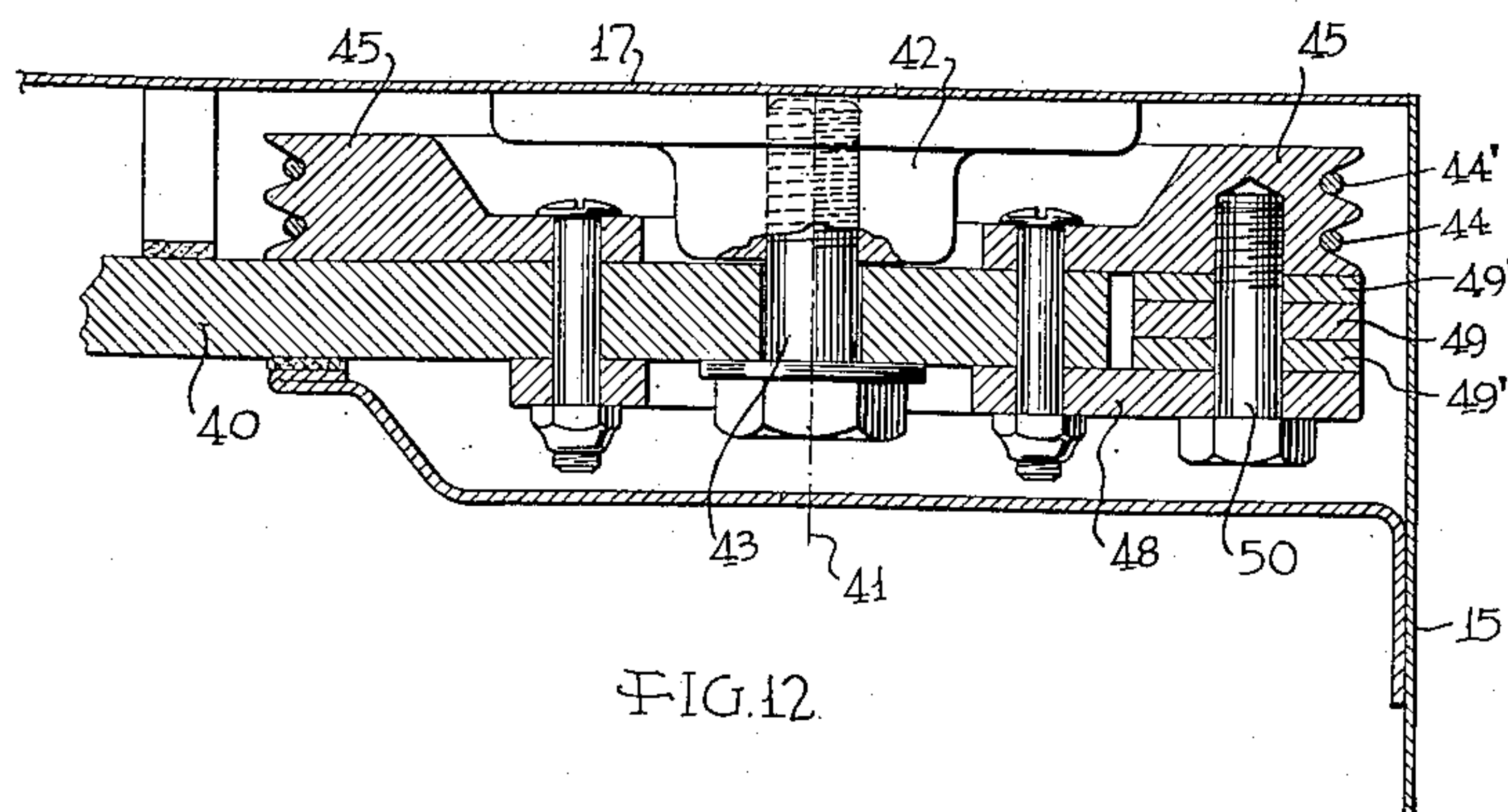


FIG. 12

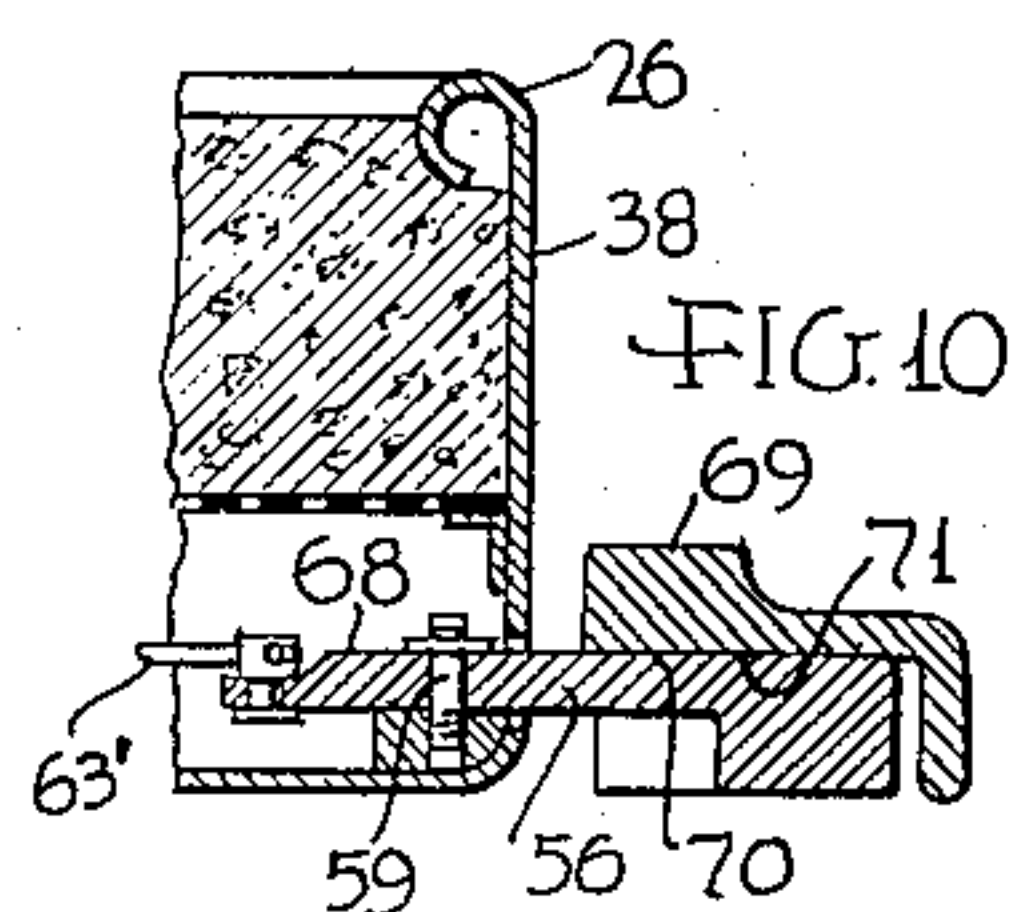


FIG. 10

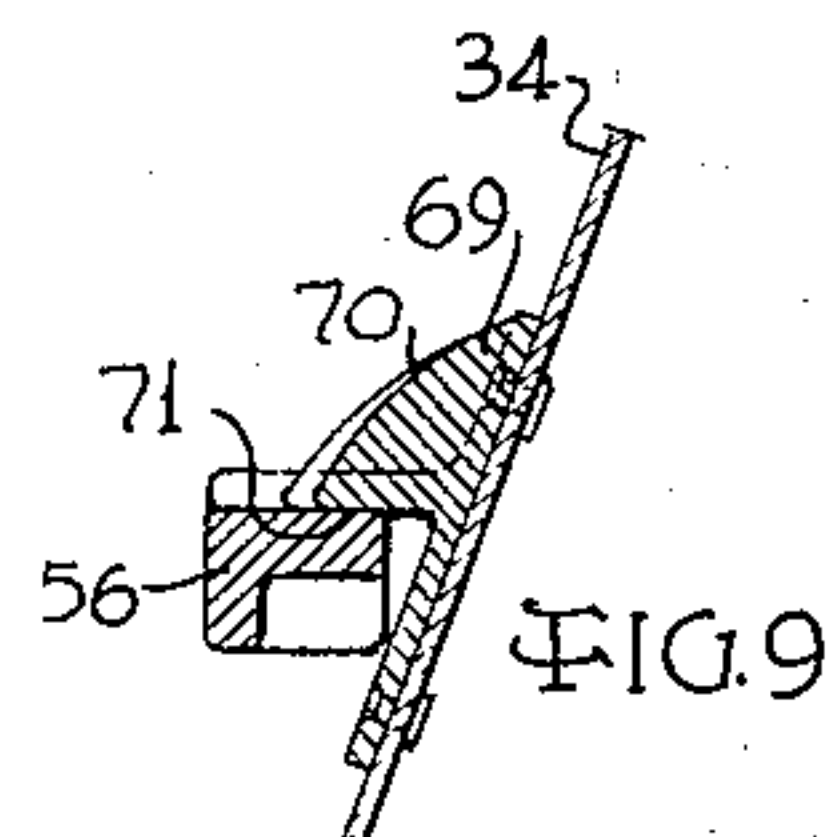


FIG. 9

INVENTOR.
Michael Watter.

BY *Maurice A. Crews*

ATTORNEY

UNITED STATES PATENT OFFICE

2,628,366

ROOM WITH MOVABLE BED FOR RAILWAY
SLEEPING CARS OR THE LIKE

Michael Watter, Philadelphia, Pa., assignor to
The Budd Company, Philadelphia, Pa., a cor-
poration of Pennsylvania

Application September 15, 1948, Serial No. 49,398

4 Claims. (Cl. 5—10)

1

The invention relates to room arrangements for sleeping cars or the like and particularly to the bed supporting and operating means in such rooms as can be readily converted from sitting rooms to sleeping rooms.

It is a principal object of the invention to simplify the bed supporting and operating means and the means for holding the bed in its stowed and use positions and to provide such supporting and operating means which can be readily operated to move the bed between the use and stowed positions and be readily locked in these positions.

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 drawings forming a part of this specification.

In the drawings, which are largely diagrammatic,

Figure 1 is a sectional plan view through a portion of a railway car equipped with rooms with which the invention is shown associated, the section being taken substantially on the line 1—1 of Fig. 2;

Figure 2 is a longitudinal vertical 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;

Figure 3 is an isometric view on an enlarged scale with parts broken away showing a room similar to one of the upper rooms shown in Figs. 1 and 2, showing the invention applied to the movable bed therein, the bed being shown in the stowed position;

Figure 4 is an enlarged fragmentary transverse sectional view through the upper portion of a railway car equipped with the invention, showing the bed in stowed position in full lines and in use position in dot-and-dash lines;

Figure 5 is a diagrammatic view of the arrangement of the flexible means constraining the opposite ends of the bed to move together at the same rate;

Figure 6 is a diagrammatic view, parts being broken away, of the bed latching means in the stowed position of the bed;

Figure 7 is a detail sectional view through the latch and keeper and associated parts shown in Fig. 6, the section being taken along the line 7—7 of Fig. 6;

Figure 8 is a detail plan view of the latch and keeper and associated parts, broken away or in section, when the bed is locked in use position;

Figure 9 is a detail sectional view through the latch and keeper of Fig. 8, the section being taken along the line 9—9 of Fig. 8;

Figure 10 is a detail sectional view of the latch and keeper of Fig. 8, the section being taken on the line 10—10 of Fig. 8;

Figure 11 is a detail sectional view through the guide rail and associated parts; and

2

Figure 12 is an enlarged detail sectional view through the pivoted end of a bed-supporting arm showing the grooved sheave or pulley and associated parts secured thereto.

In the drawings the invention has been shown applied to the upper rooms of a room arrangement generally similar to that disclosed in co-pending application, Serial No. 24,034, filed April 29, 1948, in the names of Carolus L. Eksbergian and Michael Watter and entitled Sleeping Car with Superposed Rooms, now Patent No. 2,548,293, April 10, 1951, but it will be understood that this is merely by way of illustration, and that the novel features of the invention may be used in other relations.

In the arrangement shown, Figs. 1 and 2, 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 arranged in longitudinal series on both sides of the center aisle. Each series is composed of vertically superposed pairs of rooms A—B and C—D, the pairs being defined longitudinally by the transverse partitions 16 and 17 and 17 and 18. The vertically superposed rooms A—B and C—D are reversely arranged with respect to the common separating wall 17 and are divided by a generally horizontally extending stepped wall or partition 19 into a standing height section, a sitting height section and a less than sitting height section. Each stepped wall comprises an upper generally horizontally extending portion 20 extending inwardly from a transverse wall 16 or 18, an intermediate horizontally extending portion 21 and a lower generally horizontally extending portion 22. The upper and intermediate portions 20 and 21 are interconnected by a generally vertically extending portion 23, while the intermediate portion 21 and lower portion 22 are interconnected by a generally vertically extending portion 24.

Each of the rooms is equipped with a movable bed, those in the lower rooms being generally designated 25, and those in the upper rooms, 26, the beds being movable from stowed to use positions. When moved to the use position, as shown at the bottom right of Fig. 1 and the right of Fig. 2, the beds extend substantially the full length of the rooms between the transverse walls 16 and 17 or 17 and 18. In the lower rooms B and D, chairs 27 are provided, which may be folded and swung to an out-of-the-way stowed position when the room is made up as a bedroom, as shown at the right of Fig. 2.

In the upper rooms A and C, seats 28 and seat backs 29 are disposed on the intermediate horizontal portion 21 of the separating partition 19 and the generally vertically extending portion 23, respectively. These may remain in position when the rooms are converted into bedrooms, as shown at the right of Fig. 2.

As clearly shown in Fig. 1, the beds are of less

3

than the full width of the rooms, so as to leave standing space for the occupant alongside the aisle side of the beds.

The lower rooms B and D are rendered intercommunicating with adjacent similar rooms through doors and doorways 30 in the walls 16 and 18. Similarly, the upper rooms A and C are rendered intercommunicating through doorways and doors, as 31. As shown in Fig. 1, the doorway is shown open at the top and closed at the bottom of the figure.

The lower rooms each have a doorway and door 32 adjacent their ends communicating with the aisle, and to provide headroom at this doorway location, the separating partition portion 20 is formed along the aisle wall with a raised portion 34.

The upper rooms A and C have doorways and doors as 35, communicating with the aisle, these being arranged a sufficient distance from the separating wall 17 to provide space for a combined toilet, wash basin and cabinet, designated generally by 36, between the doorway and the transverse partition 17 and adjacent the aisle wall 15. The vertical portion 24 of the separating partition 19 is offset at 37 adjacent the aisle, to provide ready access to the room from the aisle doorway 35.

As shown in Figs. 1 and 2, the bed 26 in the upper room is movable between a horizontal use position adjacent the side wall 11, as shown at the right, and a raised position adjacent the roof or ceiling 13 and extending adjacent and over a portion of the aisle, as indicated in full lines at the left of Fig. 2 and in dot-and-dash lines at the left of Fig. 1.

Since the invention has to do primarily with the manner of supporting and guiding the bed 26 in the upper rooms A or C between its use and stowed positions and the manner in which it is secured in either position, this arrangement will now be described in detail by reference to the remaining figures of the drawing.

In Figs. 3 and 4, the bed 26 is shown in the raised stowed position in full lines, and in Fig. 4 in the lowered use position in dot-and-dash lines.

The bed frame, indicated at 38, is carried, through pivotal connections 39 at its opposite ends disposed substantially on the central longitudinal vertical plane and above the center of gravity thereof so as to support the bed in substantially balanced relation, by a pair of arms 40, 40. The opposite ends of these arms have a pivotal connection, designated generally by 41, 41 on the respective transverse walls, as 16 and 17, adjacent the aisle wall 15.

This pivotal connection is shown in detail in Fig. 12, the arm being shown slightly spaced from the adjacent wall, as 17, by a bracket spacer 42 rigidly secured to the wall and into which bracket is screwed the headed pivot bolt 43 passing through a hole in the arm 40.

The arms 40, 40 are positively constrained to move together so that both ends of the bed move at the same rate to avoid cocking of the bed in its movement. Since the axis of the pivotal connection 41, 41 of the arms to the parallel transverse walls 16 and 17 is vertically below the top of the doorway to the aisle 35 and thus intersects the doorway, it is not feasible to rigidly interconnect the arms along the line of this pivotal connection because such connection would more or less obstruct the doorway opening to the aisle. To provide the necessary constraint to cause the arms 40 (Figs. 3, 4 and 5) to move to-

4

gether, the invention provides a cable and pulley connection between these arms, in which the interconnecting cable passes above the doorway opening. In the form illustrated, each arm 40 carries, coaxially with the pivotal mounting at 43, a double-grooved pulley 45. Cables 44 and 44' interconnect these pulleys, the cable 44 being secured at one end in one of the grooves of a pulley 45, and running from this groove around guide pulleys 46 and 47 secured to the aisle wall, and being secured at its opposite end in one of the grooves of the pulley 45 secured to the other arm 40. The cable 44' interconnects the pulleys 45 of the respective arms 40 through the other grooves of the pulleys 45 in similar fashion, the arrangement being such that one of the cables 44, 44' is unwound from a given pulley 45 while the other cable 44', 44 is wound up about this same pulley 45.

To provide a counterbalance for the bed, short arms 48 are secured to the pivoted ends of the respective arms 40 on the side thereof opposite the grooved pulley 45, the same bolts that secure the pulley also securing the short arm, Fig. 11. The arm 40 terminates short of one side of the periphery of the pulley 45 and the end of the short arm 48 associated therewith, and between this projecting portion of the pulley and the adjacent end of the arm 48 is pivoted a strap 49 through a pivot bolt 50. Spacing and reinforcing washers 49' are provided on opposite sides of the end of the strap through which the bolt 50 passes. The strap 49 has its lower end secured to a counterbalance spring 51, the opposite end of which is secured to a suitable fixed abutment, not shown.

The bed 26 itself, since it is mounted in substantially balanced relation on an axis above its center of gravity on the arms 40, does not require a counterbalance, but its swinging movement about the pivotal connections 39, 39 is preferably controlled by suitable means. Such means will now be described.

Since the doorway 31 in the transverse wall 17 extends upwardly above at least a portion of the path of movement of the bed, such control means is provided only at one end of the bed, that adjacent the wall 16.

Such means is shown in Figs. 3, 4 and 10 as comprising a downwardly and outwardly inclined rail 52 supported in spaced relation from the wall 16 as by spaced mounting blocks 53 (see Fig. 11).

Near the outer margin of the adjacent end of the bed frame 38 is mounted a grooved roller 54 running on the rail. The roller is prevented from leaving the rail by an opposed roller 55 secured beneath the underside of the rail, and supported by an arm 55' forming a unitary assembly with the mounting of the roller 54. This rail 52 and roller 54 prevent endwise movement of the bed and positively guide it to and from the horizontal use and stowed positions, respectively, when the bed is moved between these positions.

Simple locking means are provided for locking the bed in either its stowed position or its use position.

To this end a latch member, designated generally by 56, is pivotally mounted at 59 adjacent the inner margin of the bed frame 38 and has its latching arm projecting through a slot beyond said margin. See Fig. 7.

This latching arm has a projection 57 from its lower face having a hook shaped contour 58 on its side toward the latch pivot 59. The side of the latch arm has a cam face 61 which cams the latch aside when it engages the keeper stud 60

5

projecting up from the bottom of the recess 61', Fig. 4, above the aisle into which the inner margin of the bed is received when in stowed position. When the point of the hook shaped contour 58 passes the keeper stud, the spring 63, which acts on the other arm 68 of the latch, causes the hook shaped surface 58 to lock behind the stud and secure the bed in the stowed position. A stop, such as a pair of stop pins, 64, prevent movement of the latch beyond a certain point under the action of the spring.

The latch is operated to release it by a handle 65, mounted on the bottom of the bed and projecting normally lengthwise of the bed, where it is conveniently reached by the operator, this handle being provided on its shaft 66 with a crank arm 67 connected to the inner arm 68 of the latch 56 by a compression member 63' passing through an abutment 72 fixed to the bed frame and through the spring 63. The spring reacts through one end against said abutment and through its opposite end against an abutment 73 fixed to the member 63'. With this arrangement the operator grasps the handle 65 and by the same outward push thereon, releases the latch and starts the bed from the stowed toward the use position.

The same latch 56 locks the bed in the use position by locking behind a keeper 69 secured on the raised portion 34 of the wall portion 20 alongside the use position of the bed. This keeper has a cam portion 70 for camming back the latch as it is brought down with the bed to the use position. In the use position the latch 56 is snapped under the shoulder 71 of the keeper, as shown in Figs. 9 and 10, to lock the bed in the use position thereof. It will be understood that the bed in use position has its one end resting on the horizontal portion 20 of the separating wall between the upper and lower rooms, and its opposite end at the same time rests on suitable supports (not shown) extending from the wall 17.

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

What is claimed is:

1. In a sleeping car, a room defined in part by spaced parallel walls and a third wall interconnecting said parallel walls, a bed extending lengthwise from one to the other of said parallel walls and movable between a stowed position adjacent said third wall and a use position remote therefrom, and means for supporting and guiding the bed in such movement comprising a pair of spaced arms hinged at their ends, respectively, to the opposite ends of the bed and to the room walls so that they swing downwardly and away from said third wall in moving the bed from stowed to use position, a doorway in the third wall crossing the axis of the pivotal connection of said arms to the room walls, and means operatively connected to the arms adjacent their pivotal connection to the room walls and extending from arm to arm around the doorway opening and interconnecting said arms so as to constrain them to move together.

2. In a sleeping car, a room defined in part by spaced parallel walls extending transversely of the car and an aisle wall having a doorway therein and interconnecting said transversely extend-

6

ing walls, a bed extending lengthwise from one to the other of said transversely extending walls and movable between a stowed position adjacent said aisle wall and a use position remote therefrom, and means for supporting and guiding the bed in such movement comprising a pair of spaced arms, one at each end of the bed, hinged at one of their ends to the respective ends of the bed and hinged at their opposite ends to the room walls adjacent said aisle wall, the axis of said last-named hinged connection crossing the doorway in the aisle wall within the room, and means operatively connected to the arms adjacent their pivotal connection to the room walls and extending from arm to arm around said doorway and interconnecting said arms so as to constrain them to move together.

3. In a sleeping car, a room defined in part by spaced parallel walls and a third wall interconnecting said parallel walls and having a large opening therein, a bed movable between a stowed and a use position, and means for supporting the bed in such movement comprising a pair of arms pivotally supporting the bed and being themselves pivotally supported adjacent the third wall and on opposite sides of the opening therein, a grooved sheave mounted on each arm concentric with its pivot, and a continuous flexible member passing around said sheaves associated with the arms and guided to pass around said opening, said flexible member constraining the arms to move together.

4. In a sleeping car, a room, a bed in said room movable between stowed and use positions, and means supporting said bed for such movement, said means comprising arms pivotally secured to the opposite ends of the bed along the central vertical plane thereof, and having their opposite ends pivotally secured to the room structure adjacent a wall thereof, and means positively constraining the arms to move together, said means comprising a grooved sheave secured to one side of each arm concentrically with its pivot, and a continuous flexible member extending around said sheaves associated with the respective arms and guided to pass around a central portion of said wall, a short extension on each arm projecting beyond its pivotal connection and secured to the side of said arm opposite the associated sheave, and a counterbalance means including a member hinged in the space between said sheave and the short extension of the associated arm.

MICHAEL WATTER.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
370,426	Stark	Sept. 27, 1887
515,686	Hyller	Feb. 27, 1894
778,539	Hamilton	Dec. 27, 1904
785,220	Knaggs	Mar. 21, 1905
1,006,785	Pierce	Oct. 24, 1911
1,060,753	Hall	May 6, 1913
1,164,594	Caler	Dec. 14, 1915
1,253,872	Page	Jan. 15, 1918
1,293,978	Teasdale	Feb. 11, 1919
1,295,449	Douglass	Feb. 25, 1919
1,313,760	Teasdale	Aug. 19, 1919
1,549,705	Autonio	Aug. 11, 1925