No. 867,409. PATENTED OCT. 1, 1907.

G. H. POOR.

BERTH RAISING MECHANISM FOR RAILWAY CARS.

APPLICATION FILED DEC. 7, 1905. RENEWED FEB. 28, 1907.

3 SHEETS—SHEET 1.

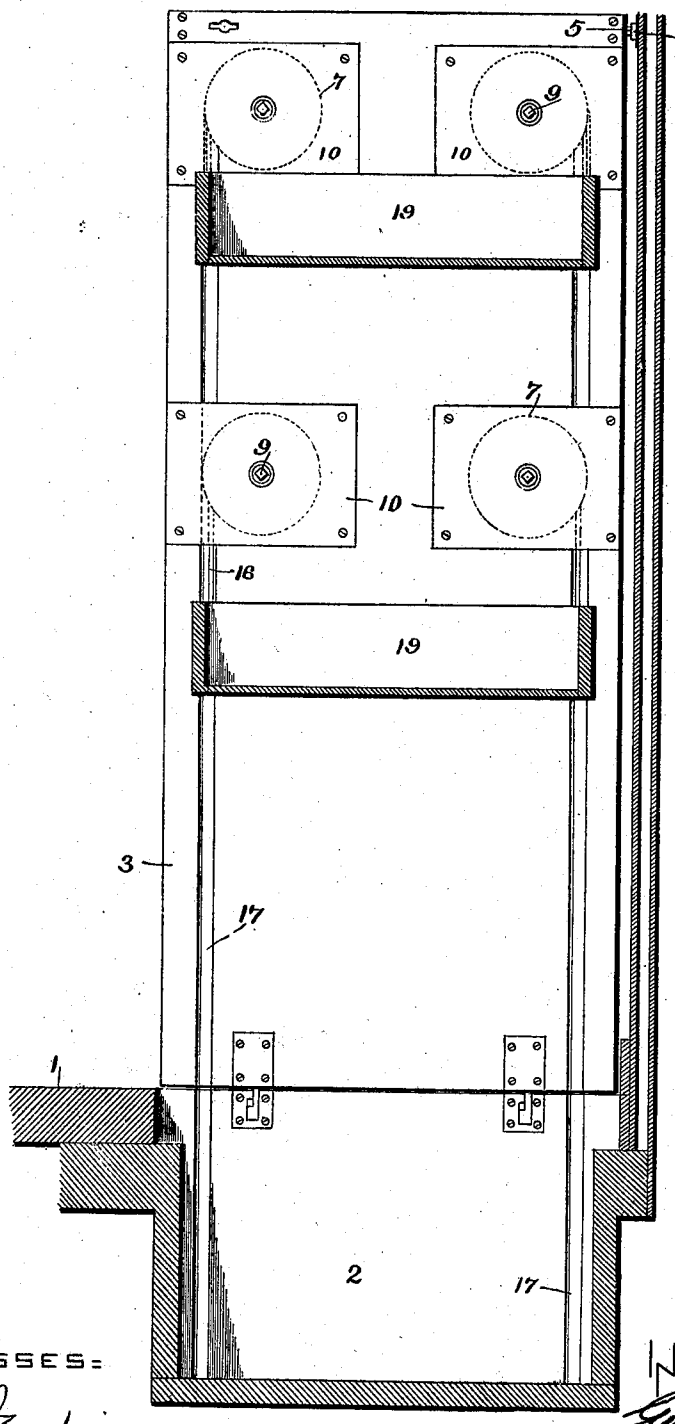

Fig. 1.

WITNESSES:
A. A. Goodwin
M. M. Brewerton

INVENTOR:
George H. Poor
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his Atty

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3 SHEETS—SHEET 2.

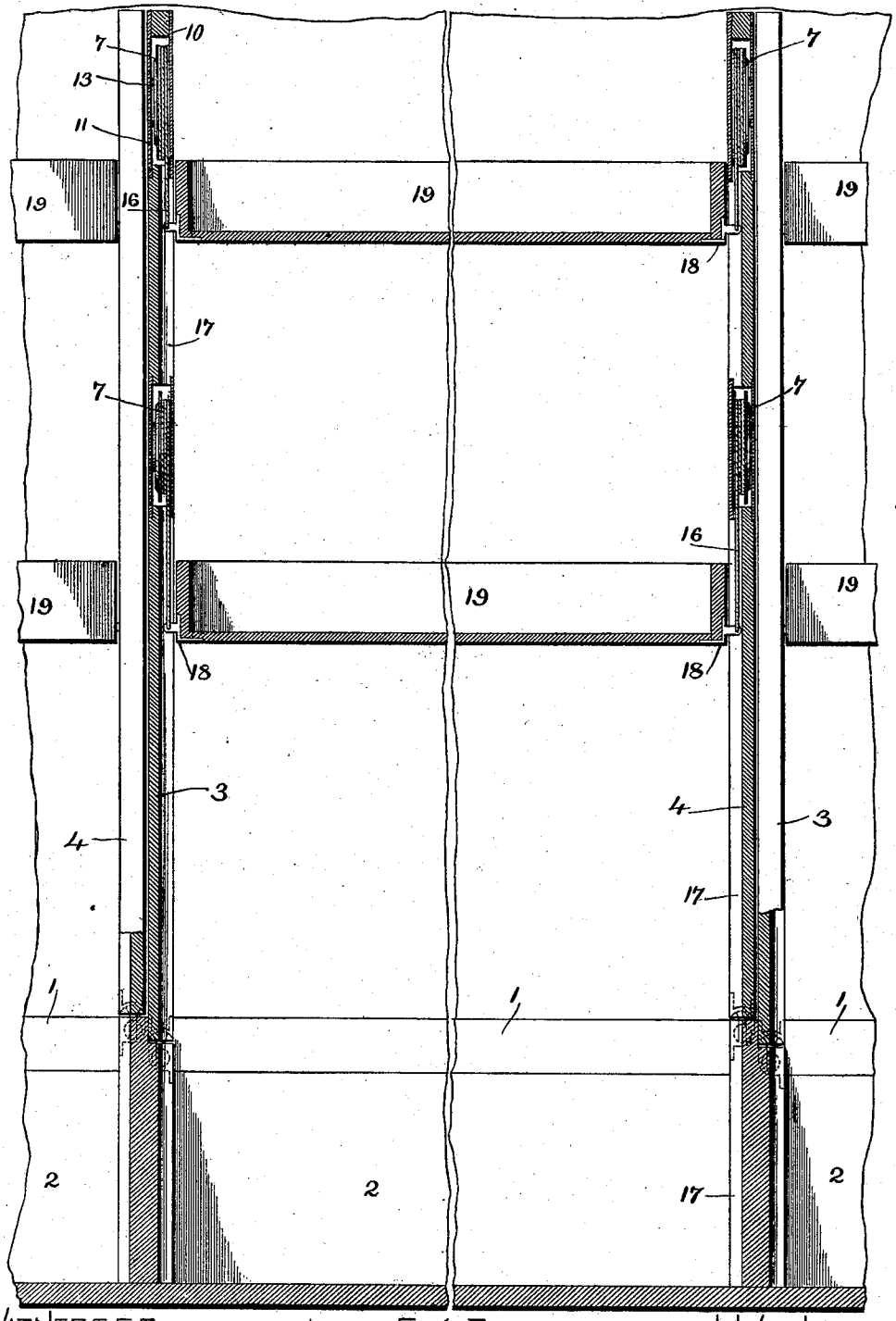

Fig. 2.

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3 SHEETS—SHEET 3.

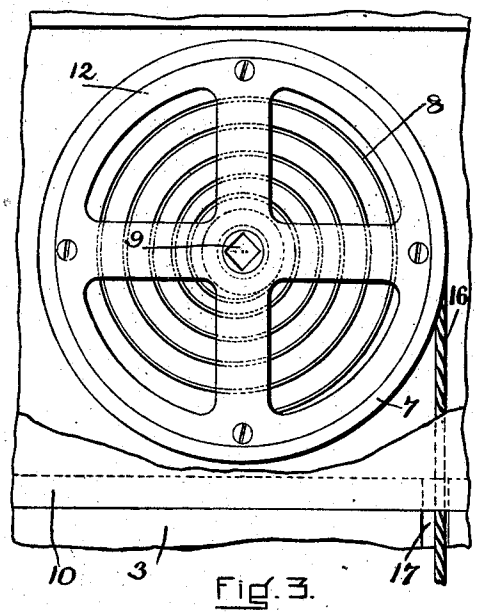

Fig. 3.

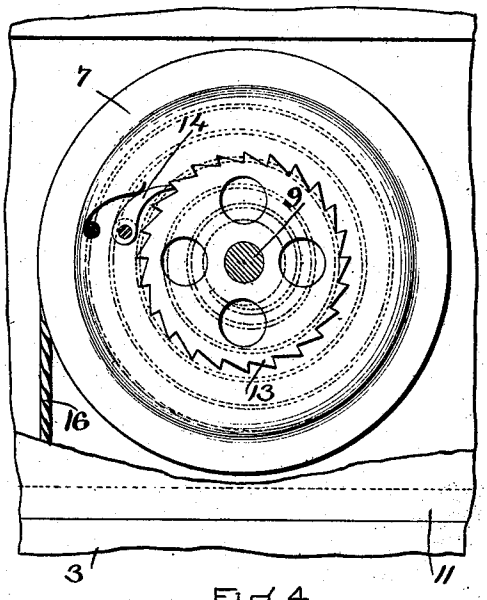

Fig. 4

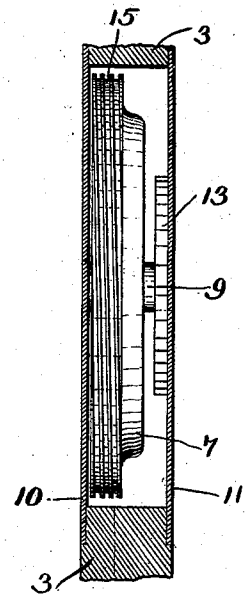

Fig. 5.

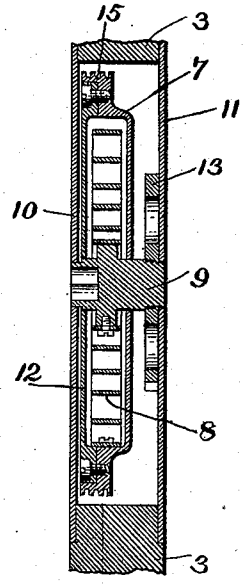

Fig. 6.

WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE H. POOR, OF PORTLAND, MAINE, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE AMERICAN PALACE CAR COMPANY, OF PORTLAND, MAINE, A CORPORATION OF MAINE.

BERTH-RAISING MECHANISM FOR RAILWAY-CARS.

No. 867,409. Specification of Letters Patent. Patented Oct. 1, 1907.

Application filed December 7, 1905, Serial No. 290,815. Renewed February 28, 1907. Serial No. 359,826.

To all whom it may concern:

Be it known that I, GEORGE H. POOR, a citizen of the United States, residing in Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Berth-Raising Mechanism for Railway-Cars, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to railway cars and particularly to such cars as are intended by the re-arrangement of the fittings and furnishings to serve as parlor, dining or sleeping cars. The type of such class of cars for which this invention is especially adapted is furnished with pits or pockets below the floor of the car which are accessible from within the car through folding trap doors that are arranged to close one over the other. It is understood that this class of car is well known, and my invention relates to improvements on such well known constructions. Such a car may be arranged as a parlor or dining car and supplied with chairs and other furniture, or it may be converted into a sleeping car having one or more tiers of berths. The pockets are of sufficient capacity so that all of the berths and other sleeping car fittings can be stowed therein, or all of the chairs and other parlor car furnishings may be similarly packed below the floor. Among the advantages of this arrangement may be mentioned the lowering of the center of gravity of the car, thus diminishing the swaying of the car, which, besides being more comfortable, wears the running gear and rails less.

The principal object of this invention is to provide a simple, practical, safe and convenient means for raising the sleeping berths from the pockets to the position required for use, and to dispense with the cumbersome, complex and inconvenient mechanism heretofore employed for the purpose.

Referring now to the construction of the car, the floor is cut at each berth section through to the pockets, and trap doors are hinged at opposite ends of each of the openings in such a way that the doors may close one over the other, this leaves the floor without obstructions for use as a parlor car. The car may be divided into one or more sections for use as a sleeping car by lifting the trap doors of the hatchways of the required sections and latching them to the side of the car, this furnishes ends for the sections and supports for the berths which have been stowed below the floor in the pockets. Cords are fastened to each end of each berth and carried to drums sunk in each trap door, the drums having powerful coiled springs acting to wind up the cords and thus pull the berths out of the pockets when the trap doors are erect. When the berths are in proper position, suitable fastenings are provided to secure the berths to the trap doors, to hold the berths as placed, and to also secure the trap doors forming the ends of the sections against shocks that might cause them to be displaced or fall.

The arrangements that have been hitherto used for lifting the berths from the pockets in such cars have been slow in action, cumbersome, unnecessarily costly, special tools have been used to apply manual power to lift the berths, the complexity of the gearing used has resulted in great waste of power, and the inaccessibility of the parts has rendered repairs difficult. Having noted these objections to the construction in use, I have endeavored to remedy the faults of the arrangement and to improve the construction of the parts, and my invention consists in locating winding drums in the trap doors to balance or to lift the berths out of the pockets, in the construction of the winding drums and in such others devices and their combinations as may be more particularly referred to.

The drawings show in: Figure 1, a cross section of a car showing the sleeping berths in position for use. Fig. 2, a longitudinal section of a car with the berths in elevated position. Fig. 3, a view of the winding drum from the inside of the section. Fig. 4, a view of the winding drum from the outside of the section. Fig. 5, a section of the trap door showing the drum in exterior edge view. Fig. 6, a section of the drum mounted in a trap door.

Below the floor 1 of the car are suitable pockets 2 opening to the interior of the car through the floor, and each pocket is covered by trap doors 3 and 4 hinged to the car framing at opposite ends of the pockets 2, so they may in one position rest flat with the floor or in another position stand upright as indicated in the drawings, being held in place when upright by bolts or latches 5 that enter sockets 6 on the side of the car, the latches being actuated in any convenient way as by bolts extending towards the opposite edges of the trap doors. Each door carries four hollow drums 7 and to the interior of each shell of the drums long stout coiled springs 8 are fastened, the other ends of the springs being secured to arbors 9 pivoted in plates 10 and 11 sunk flush with the faces of the trap door. The face 12 of the drum is slotted so the interior of the drum is visible and the face is removably secured in the drum so access may be had to the inclosed parts. The drum is free to turn on the arbor independently of the arbor's motion in the plates 10 and 11. A ratchet 13 is fastened to the arbor and a pawl 14 is pivoted on the plate 11 so the drum may be put under tension of the spring 8 when a key is inserted in the squared socket of the arbor. The surface of the rim of the drum is spirally

grooved as at 15, to guide a cord 16 leading through grooves 17 in the door and ends of the pocket to brackets 18 fastened to the berths 19. Each of the winding drums is independently accessible by removing its plate 10 so a worn cord can be quickly renewed.

When the car is to be cleared for use as a parlor car, the chairs and other furnishings are taken from the pockets 2 and the berths 19 pressed down in to the said pockets, then one door as 3 is unlatched at 5 and turned on its hinges into a horizontal position, to be similarly followed by the other door 4 which is arranged to close over the door 3, so the floor of the car when the doors are down will be flat. When the car is to be converted into a sleeper a door as 4 is lifted into a vertical position and fastened by its latch 5, then the other door as 3 is similarly put in an upright position and fastened by its latch 5 to the side of the car, thus forming partitions for a section. If the springs 8 of the drums 7 are not under enough tension to lift the berths, they may be easily lifted by hand from the pockets 2 high enough to permit the chairs and the furniture not now required to be stowed in the pockets, then the berths are positioned at the right height and secured in any convenient way to the trap doors 3 and 4, so that each pair of doors with its berths may form an integral independent section of the car.

Although my invention is described herein more particularly with reference to its use in railway cars of the class herein referred to it is also adapted for use in steamships and other vessels, and I consider such use within the scope of the invention.

Having described my invention, I claim and desire to secure by Letters Patent of the United States:

1. In a railway car, a car body, and pockets below the floor of the car body, combined with trap doors each hinged at opposite ends of the pockets, means permitting the trap doors being arranged when recumbent to form part of the car floor and when held upright to constitute section partitions to support berths, spring actuated drums in the trap doors, and connections from the drums to the berths, substantially as described.

2. In a railway car, a trap door forming part of the floor system of the car, plates on the faces of the door, and means for holding the door upright, combined with an arbor pivoted in the plates, a drum pivoted on the arbor, a spring secured to the arbor and drum, means for winding the spring, a ratchet and pawl to maintain the tension of the spring, a cord having one end secured to the drum, devices to guide the cord on the rim of the drum and a berth fastened to the other end of the cord, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE H. POOR.

Witnesses:
LEO H. LIBBY,
CHAS. F. HOWE.