

(No Model.)

4 Sheets—Sheet 1.

J. M. BURTON.
RAILWAY SLEEPING CAR.

No. 550,863.

Patented Dec. 3, 1895.

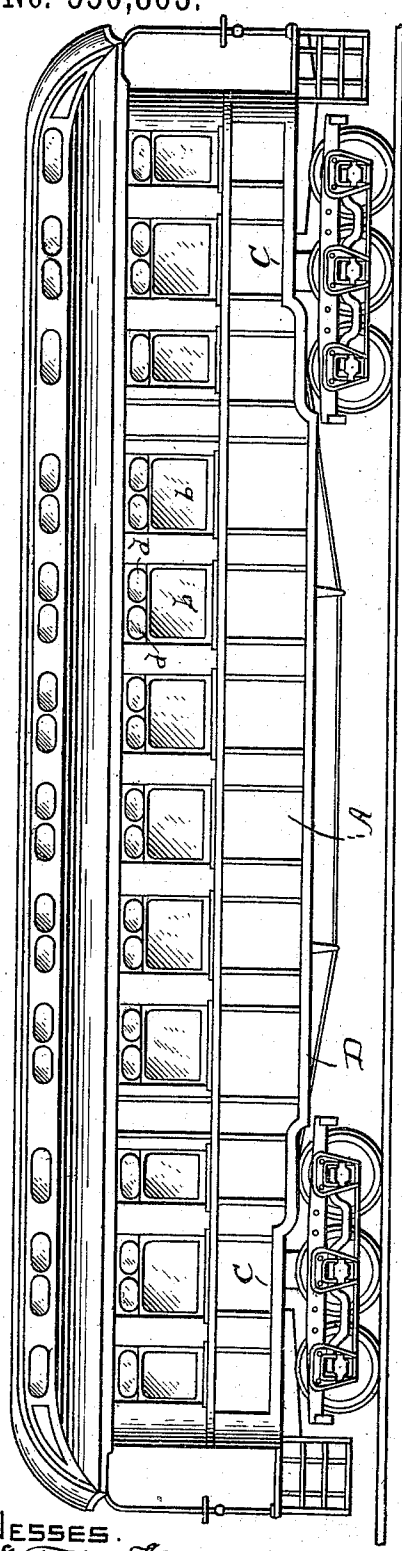


FIG. 1.

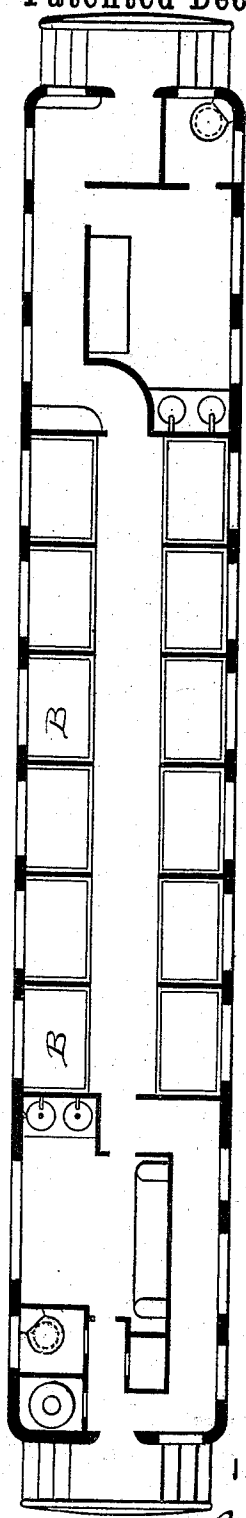


FIG. 2.

WITNESSES.
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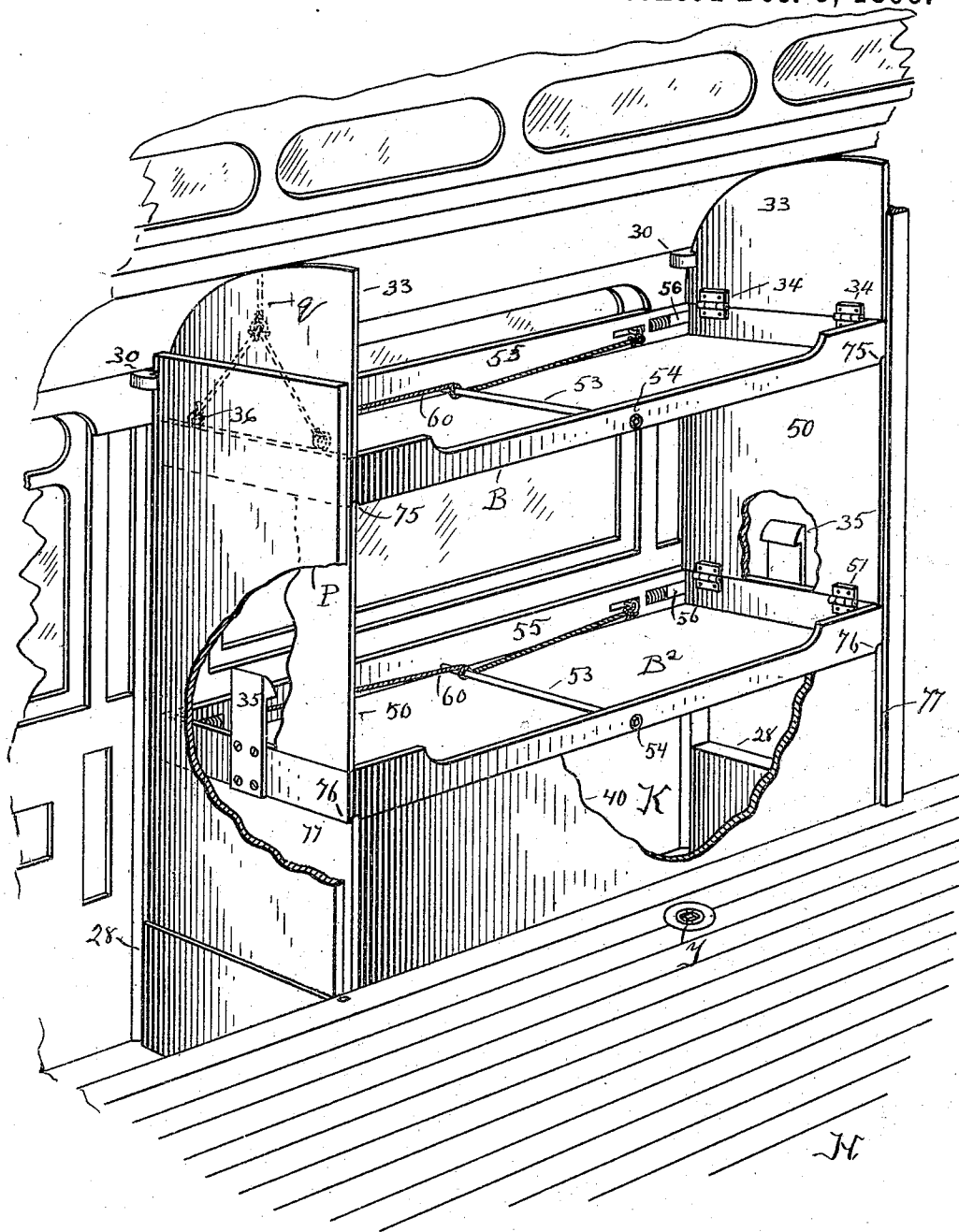


FIG. 3.

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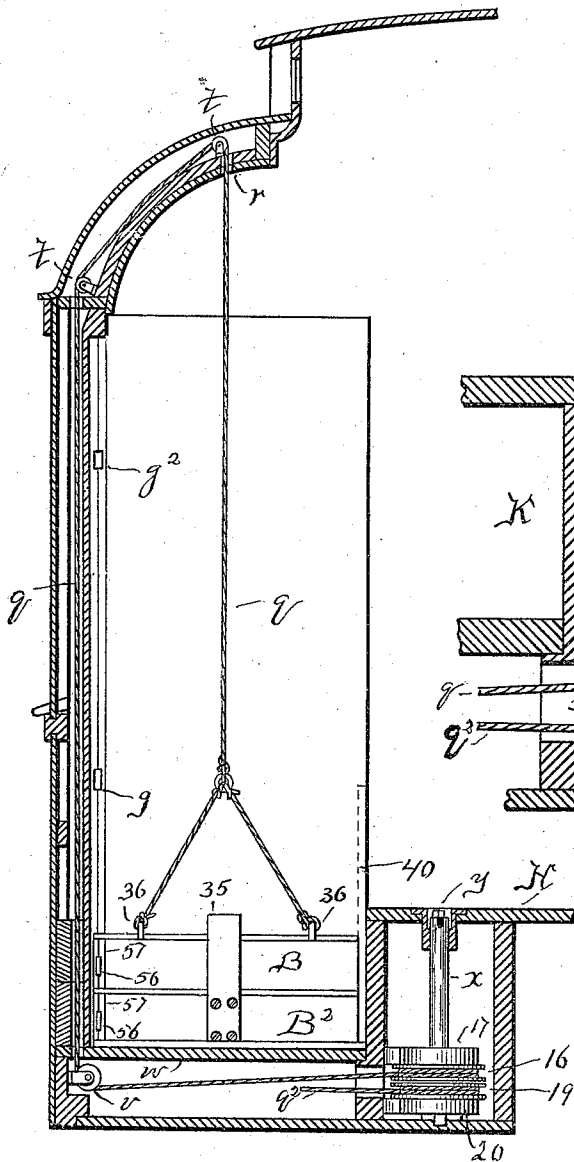


Fig. 4.

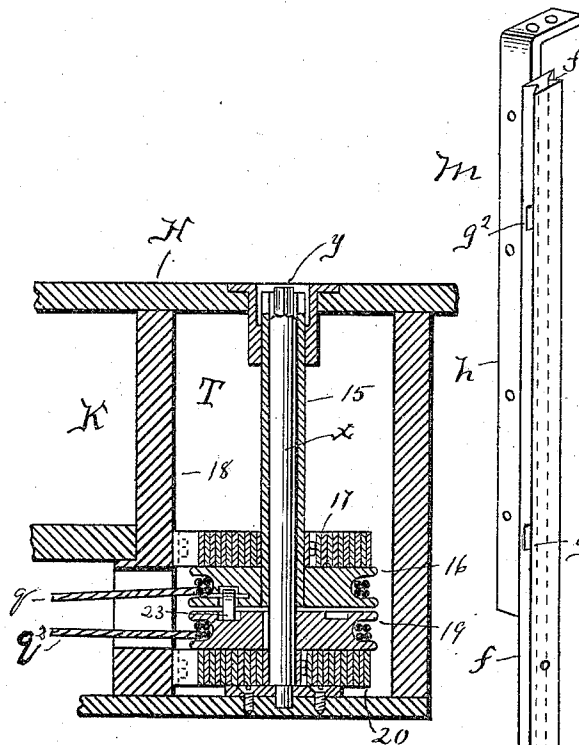


Fig. 5.

Fig. 7.

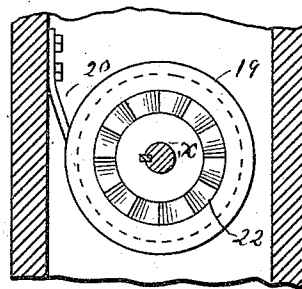


Fig. 6.

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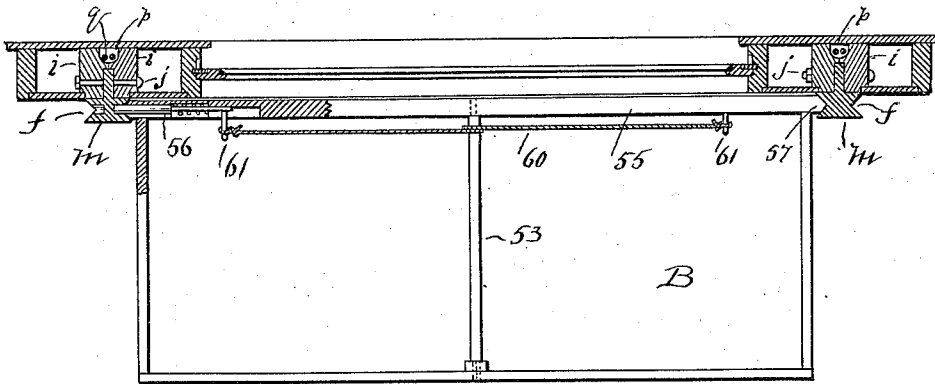


Fig. 8.

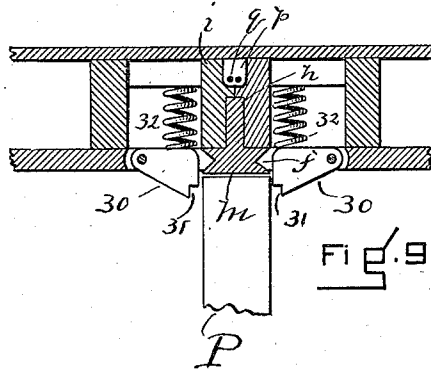


Fig. 9.

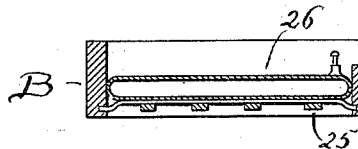


Fig. 10.

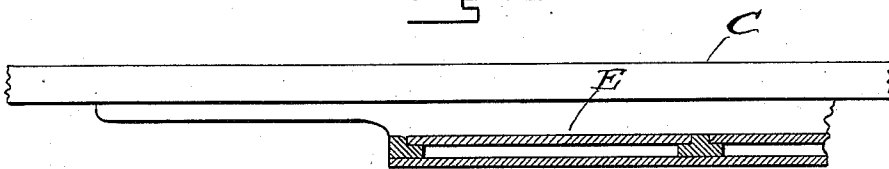


Fig. 11.

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UNITED STATES PATENT OFFICE.

JOHN M. BURTON, OF BOSTON, MASSACHUSETTS.

RAILWAY SLEEPING-CAR.

SPECIFICATION forming part of Letters Patent No. 550,863, dated December 3, 1895.

Application filed January 23, 1895. Serial No. 535,928. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. BURTON, of Boston, in the county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Railway Sleeping-Cars, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my improved sleeping-car; Fig. 2, a horizontal section of the same; Fig. 3, a perspective view, enlarged, showing the berth in position, a portion of the partitions being represented as broken away; Fig. 4, a vertical transverse section of one side wall of the car, showing the berth-operating mechanism; Fig. 5, a sectional view, enlarged, further illustrating this mechanism; Fig. 6, a horizontal section taken between the reels; Fig. 7, a perspective view of one of the slideways for the berths; Fig. 8, a horizontal section taken through the side wall of the car; Fig. 9, a horizontal section showing the partition locks or catches; Fig. 10, a vertical transverse section through the bed, and Fig. 11 a sectional view showing the car-sill.

Like letters and figures of reference indicate corresponding parts in the different views of the drawings.

My invention relates especially to an improvement in railway sleeping-cars, it being particularly adapted to a device for housing the berths when not in use below the flooring of the car and adjusting the same in position.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the car considered as a whole. The car is of the usual form, excepting as hereinafter specified, and mounted in the ordinary manner upon trucks. As shown in Fig. 2, the car is provided at either end with toilet-rooms, and the berths B are arranged along the side of the car centrally between the trucks. The main sill C over the trucks is of the ordinary distance from the road-bed, while between said trucks there is an additional sill D, offset or dropped

downward to form a space E for receiving the berths. The remainder of the framing of the car is the same as the ordinary standard sleeping-cars. The additional sill or stringer attachment D, attached to the main sill, runs substantially two-thirds the length of the car.

The window-posts of the car are extended, and above the main windows *b* I form two independent slide-windows *d* for ventilating the upper berth, as hereinafter specified.

The car, when the berths are housed below the flooring H, can be provided with movable seats or reclining-sofas, which may be disposed in the berth pockets or wells when the berths are in use. By means of my improvement one car can be employed both as a parlor-car and sleeping-car. These wells K drop a suitable distance below the flooring H.

The metallic guides M are shown in detail in Fig. 7. These guides are constructed of T-beams, the edges of the heads of which are grooved longitudinally at *f*. The web *h* of the beam is secured in the side wall of the car between wooden posts *i*, which are connected by bolts *j* through said web. The beam is attached also to the sills and plate. The grooves *f* in these beams serve as guideways for the berths. In said grooves there are bolt-holes *g g*², the hole *g*² being larger than the hole *g*.

The wooden clamping bars or posts *i* are chambered at *p* to form a socket for the cables *q*. These cables pass through an opening *r* (see Fig. 4) in the monitor roof of the car, thence over pulleys *t*, and downward through the run or chamber *p*, and under the flooring *w* of the well or pocket, around a pulley *v*.

A spindle *x*, vertically arranged, has a squared end *y* exposed through the flooring H of the car, adapting it to receive a wrench, whereby said spindle may be rotated. On this spindle there is a loose sleeve 15, which bears a grooved pulley 16, around which the cable *q*, at one end of the berth B, is wound. A helically-wound spring 17 has one end secured to the sleeve, its opposite end being fast to a partition 18 in the chamber T below the flooring H. A pulley 19 is keyed onto the spindle *x*, and a similarly-wound spring 20 is secured to said spindle and the partition. The cable *q*², at the opposite end

of the berth, is wound on the pulley 19. The upper face of this pulley is serrated or corrugated at 22, and a click 23, pivoted in the pulley 16, engages said teeth, so that when the spindle is rotated by means of a wrench or key in one direction both pulleys will be carried in the same direction simultaneously.

The berths B are provided with a spring 25, (see Fig. 10,) on which an air-mattress 26 may be disposed. The wells or pockets are separated below the floors by partitions 28. (See Fig. 3.) A removable partition P separates the sections above the flooring H. These partitions are disposed transversely of the pockets and are held at their upper ends by two catches 30, (see Fig. 9,) pivoted in the wall of the car, respectively, at opposite sides of the metallic guides M. These catches are pushed outwardly by springs 32, and have in their free ends notches or shoulders 31, leaving a space at either side of the partition P to receive and lock the head and foot boards 33 (see Fig. 3) of the upper berth B, which are hinged to said berths at 34. When housed, the upper berth B is in engagement with the lower berth B², as in Fig. 4, and is held by spring-catches 35. The upper berth is provided with eyes 36 to receive the ends of the cable *g*.

The well when the beds are housed is closed by a removable lid or cover 40, which when the well is open is disposed on its edge in vertical position at the front thereof, as shown in Fig. 4, and closes the space below the lower berth B.

The lower berth is provided with head and foot boards 50, hinged at 51, which when not in use fold into the body of the berth. Transversely of each berth there is arranged a shaft 53, the end of which projects through the outer side board at 54 and can be operated by a key in the same manner as the spindle *x*. At the ends of the rear side board 55, which may be constructed of any suitable material, (preferably metal,) of the berth there is a spring-pushed bolt 56. This side board is elongated beyond the ends of the berth at 57 (see Fig. 8) and shaped to enter the grooves *f* in the upright castings M. The bolts 56 in the upper berth are larger than the bolt-sockets *g* in said castings, so that they will slide by without entering said sockets, but are adapted to enter the sockets *g*². A cord 60 is wound on the shaft 53, and its opposite ends are secured to pins 61, connected, respectively, with the spring-pushed bolts 56, so that the operator by turning said shaft by means of the key at 54 can retract the bolts for the purpose of lowering the berths.

In the use of my improvement when it is desired to adjust the berths for occupancy the lid or cover 40, which closes the pocket and normally forms a part of the flooring, is removed and disposed in vertical position, as in Figs. 3 and 4, at the front of the well. The operator then draws the cable *g* downward from the opening *r* and attaches it to the eyes

36 in the upper berth B after having removed the partition-boards P and securing them between the catches 30, or as shown in Fig. 4. The withdrawal of the cable, as described, unwinds the pulley or reel 16 in one direction and tightens the spring 17. The cable at the opposite end of the berth being operated in like manner, unwinds the companion pulley 19 in the same direction and tightens its spring 20. The operator now rotates the spindle *x* by means of the wrench or key, which will carry the pulleys conjointly in the opposite direction and wind the cables thereon, the tension of the spring assisting materially. This movement elevates the berths, which are held together by the spring-latches 35. The bolts 56 of the upper berth, as described, pass the lower sockets *g*, and when the corresponding bolts in the lower berth register with said sockets it is locked. The operator continues to wind the spindle until the upper berth is locked in the sockets *g*². Lids 77 are hinged under the lower berth and are held in grooves 76 in said berth. These lids 77 are employed to close the end space under the lower berth and to support said berth. When only one section of the car was made up, the partition P would be concealed under the flooring of the car in the adjacent berth-pocket. The lids or boards 77 are now thrown upward and secured in the catches 76. The boards 50 in the lower berth are thrown up and held in grooves 75 on the under side of the upper berth, said boards serving to support said upper berth. The lids 33 are thrown up in a similar manner and engage with catches 30. To dismount or house the berths the operator, folding in the head and foot boards 50 and 33, actuates the shafts 53 to withdraw the bolts 56, when the upper berth would slide downward onto the lower berth, and by closing the lids 77 the whole can be dropped into the pocket. During this downward movement the springs on the reels are again wound up, and when the cables are released from the eyes 36 the springs will retract said cables in a manner which will be understood by those conversant with such matters without a more explicit description.

The double windows *d*, when the berths are in position for occupancy, can be opened separately to admit air to the upper berth, which is impracticable in many of the ordinary arrangements of berths in sleeping-cars, wherein the upper berths are hinged to the side of the car.

Having thus explained my invention, what I claim is—

1. A railway sleeping car provided with a berth pocket below its floor; guide ways in the side of the car leading from said pocket, a berth provided with elongated side boards projecting beyond the ends of said berth and adapted to slide vertically in said guide ways, and mechanism for locking the berth in position, substantially as described.

2. In a sleeping car, the combination of a

berth pocket, vertical guide ways in the side of the car, a berth having an elongated side board projecting beyond the ends of said berth and adapted to slide in said ways, and devices for locking the berth to the ways, substantially as described.

3. In a sleeping car, the combination of a berth pocket, vertical guide ways in the side wall of the car and opening longitudinally thereof and toward the end of said car, a berth adapted to slide in said ways, and mechanism disposed on the rear side of the berth and extending longitudinally thereof and adapted to slide in said longitudinally opening ways for locking the berth to the ways.

4. In a sleeping car, the combination of a berth pocket, vertical guide ways in the side of the car, a berth provided with an elongated side board projecting beyond the ends of said berth and entering said guide ways, and a spring-pushed bolt on the berth adapted to enter a socket in said guide ways, substantially as described.

5. In a sleeping car, the combination of guide ways in the side frames of the car and opening longitudinally of the car and toward the end thereof, a berth adapted to slide vertically in said ways, and means for locking said berth in said ways.

6. In a sleeping car, the combination of guide ways for the berth, having posts bolted to the web of said guideways between the car walls, substantially as described.

7. In a sleeping car, the combination of the guide ways for the berth, posts bolted to the web of said guide ways between the walls of the car and recessed to receive the berth elevating cables, substantially as described.

8. In a sleeping car, the combination of the grooved guide ways secured to a wall of the car and opening longitudinally of the car and toward the end thereof, of a berth having projections adapted to slide in the grooves in said guide ways and mechanism for actuating said berth.

9. In a sleeping car, the combination of the grooved guide ways secured to the side wall of the car and opening longitudinally thereof and toward the end of the car, and provided with a bolt socket, a berth having projections adapted to slide in said guide ways, and a bolt on the rear side of said berth and extending longitudinally thereof for engaging said socket in the longitudinally opening guide ways.

10. In a sleeping car, the combination of guide ways vertically arranged in the car wall, berths adapted to slide in said ways, devices for locking the berths in position in the ways, and a spring latch attached to the ends of one of the berths for locking said berths together.

11. In a sleeping car, the combination of two vertically sliding berths and their actuating mechanism, one of said berths being provided with a spring latch attached to the ends of said berth for locking the berths together

during a determined distance in their vertical movement.

12. In a sleeping car, the combination of two spring-pushed catches located in the side walls of the car and adapted to receive and lock a removable partition.

13. In a sleeping car, the combination of two spring-pushed catches located in the side walls of the car, and provided with angular notches at their outer ends adapted to receive and lock a removable partition.

14. In a sleeping car, the combination with the vertical ways on the car wall opening longitudinally thereof, of the berths fitted to slide in said ways, a spring-pushed bolt in said berths adapted to engage a socket in said ways, and devices for retracting the bolt from the front of the berth.

15. In a car of the class described, a spring reciprocated reel disposed below the car floor and fitted to be actuated by a key through said floor in combination with a cable on said reel, the free end of which enters the car above said floor.

16. The combination with the spindle *x*, arranged below the car flooring, of the sleeve inclosing said spindle, a pulley fast on said sleeve, a pulley fast on said spindle, springs for reciprocating said pulleys, devices for locking the pulleys together when the spindle is rotated in one direction, cables wound on said pulleys, the free ends of said cables passing between the car walls and entering the interior of the car above the berths.

17. In a sleeping car, the combination with a berth pocket, a vertically sliding berth, mechanism for operating said berth, and lids hinged at each end of said pocket and adapted to be opened in vertical position to rest under said berth.

18. In a sleeping car, the combination with a berth pocket, vertically sliding berths provided with grooves at the ends on the under side of the berths, mechanism for operating said berths, lids hinged at the ends of said pocket and adapted to be opened in vertical position and rest in said grooves and support one of said berths, and boards hinged to one of said berths and adapted to be opened in vertical position and rest in the grooves of the upper berth for supporting the same.

19. In a sleeping car, the combination with a berth pocket, spring catches in the walls of the car, vertically sliding berths provided with grooves at the ends on the under side of said berths, mechanism for operating said berths, lids hinged at the ends of said pocket and adapted to be opened in vertical position and rest in said grooves and support one of said berths, boards hinged to one of said berths and adapted to be opened in vertical position and rest in the grooves of the upper berth for supporting the same, and boards hinged to the ends of the upper berth and adapted to be held in vertical position by said spring catches.

20. In a sleeping car, the combination of

guide ways in the walls thereof provided with two sets of sockets therein, one set above the other, the lower set being smaller than the upper set, spring bolts in said berths adapted to enter said sockets, and mechanism for operating said bolts from the front of said berths.

21. In a sleeping car, the combination of guide ways in the walls thereof having sockets therein, a berth adapted to slide vertically in said ways and provided with an elongated side board projecting beyond the ends of said berth and having recesses in its ends, spring pressed bolts adapted to move in the recesses of said elongated side boards and enter said sockets, and means for operating said bolts from the front of the berth.

22. In a sleeping car, the combination with the side walls thereof, of two beams located in said walls and extending into the car, said beams being provided with guide ways on each side thereof and opening longitudinally of the car and toward the end thereof, and a berth adapted to slide in two of said ways, and means for locking the berth in the ways.

23. In a sleeping car, the combination with a berth pocket, of upper and lower berths adapted to slide vertically in said pocket, mechanism for operating said berths, pocket lids hinged at the ends of said pocket and adapted to be swung into vertical position to support the lower berth, means for holding said pocket lids in their vertical adjusted position, berth lids hinged to the ends of said lower berth and adapted to be swung into vertical position to support the upper berth, means for holding said berth lids in vertical adjusted position, berth lids hinged to the ends of the upper berth and adapted to be swung into vertical position to close the ends of said berth and spring catches in the walls of the car adapted to hold the upper berth lids in their vertically adjusted position.

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Witnesses:

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