

(No Model.)

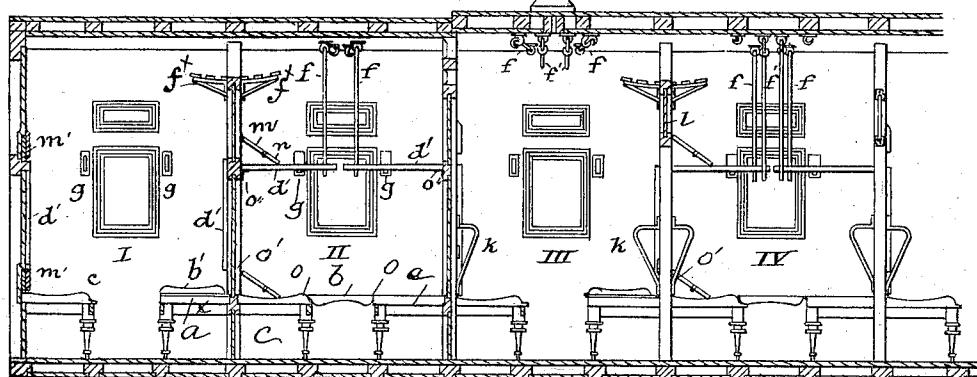
2 Sheets—Sheet 1.

I. B. GÜNZBURG.  
RAILWAY PASSENGER CAR.

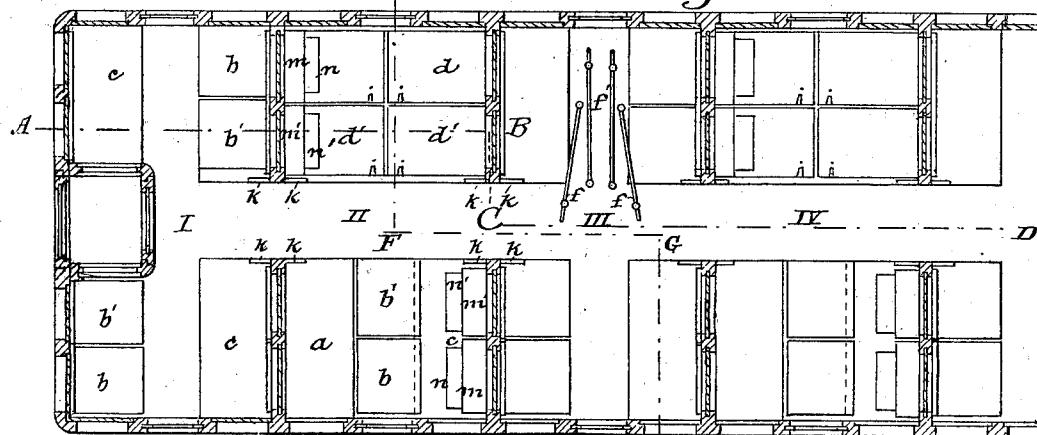
No. 544,892.

Patented Aug. 20, 1895.

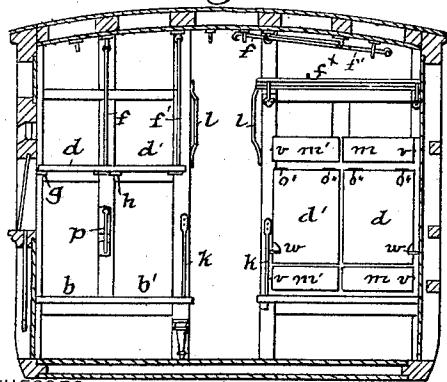
*Fig. 2.*



*Fig. 1.*



*Fig. 3.*

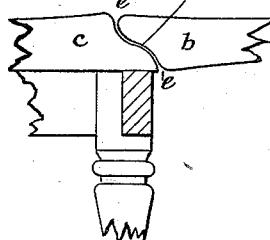


WITNESSES:

E. B. Bottom

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*Fig. 4.*



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(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

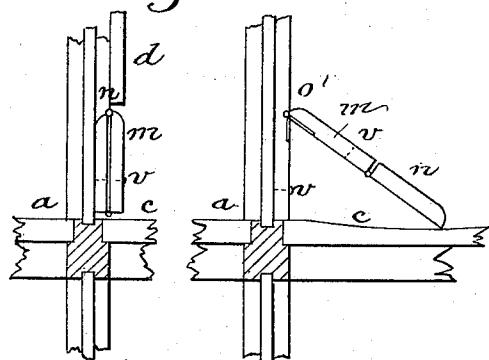


Fig. 6.

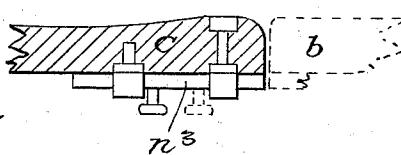


Fig. 8.

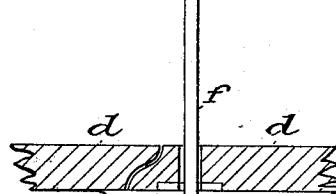


Fig. 7.

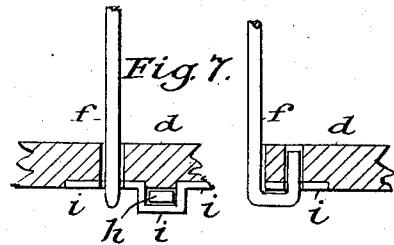


Fig. 9.

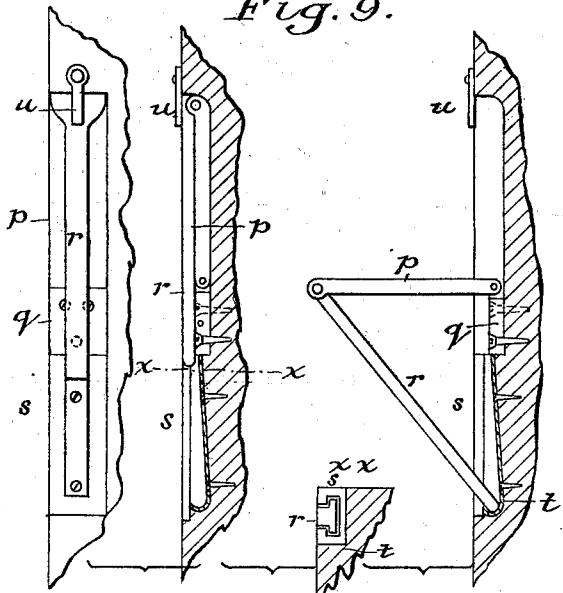
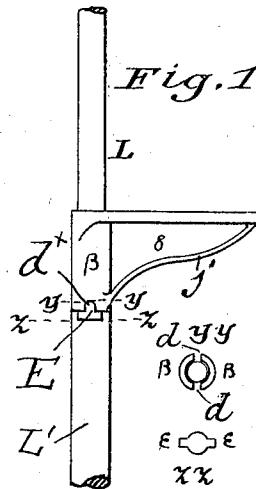


Fig. 10.



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# UNITED STATES PATENT OFFICE.

ISAAC BER GÜNZBURG, OF ST. PETERSBURG, RUSSIA.

## RAILWAY PASSENGER-CAR.

SPECIFICATION forming part of Letters Patent No. 544,892, dated August 20, 1895.

Application filed November 8, 1892. Serial No. 451,340. (No model.)

To all whom it may concern.

Be it known that I, ISAAC BER GÜNZBURG, a subject of the Emperor of Russia, residing at St. Petersburg, Russia, have invented certain new and useful Improvements in Railway Passenger-Cars, adapted for sleeping without diminishing the number of places, of which the following is a specification.

The hereinafter-described new-type railway-car adapted for sleeping offers the advantage that it contains the like number of places for passengers as the ordinary non-sleeping car of the same dimensions, all places being adapted for sleeping comfortably.

In the annexed drawings, Figure 1 shows the plan of the new-type car; Fig. 2, a longitudinal section on the line A B C D; Fig. 3, a cross-section on the line E F G H; Figs. 4, 5, 6, 7, 8, 9, and 10, details of construction.

In Fig. 1 the lower half represents the plan of the lower range, and the upper half that of the upper range.

I and III, in Figs. 1, 2, and 3, show the aspect of the car in day-time, and II and IV its aspect in the night.

In Fig. 1, III shows the rods placed near the ceiling in day-time.

The car represented in the drawings is provided in the middle with a longitudinal passage, on either side of which are arranged short two-seated benches. The benches are placed so that every two benches face each other, with a space between them, and each pair of benches form a separate compartment for four passengers—two on each bench. The compartments on either side of the passengers are separated from each other by partitions reaching either up to the ceiling or a little lower. In the latter case only the end posts reach to the ceiling, as shown in the drawings. The following specification refers to one such compartment, they being all alike.

On the bench *a* are placed the boards *b* and *b'*, the surfaces of which have a hollow on top and are level underneath, and which are connected with the same by hinges *o*. When the boards *b* and *b'* are turned on their hinges they shut up the space between the benches, and the free ends of the boards place themselves on the border of the opposite bench *c*. The free ends of the mobile boards *b* and *b'* are provided with curvilinear edges. (See the

line *ee*, Fig. 4.) Of a similar profile is the edge of the opposite bench *c*, so that when the boards *b* and *b'* are turned over the top sides 55 of the bench *a*, of the boards *b* and *b'*, and of the bench *c* form one horizontal surface. The space between the partitions or the breadth of the compartment, composed of two places and the space between them, is such as to 60 permit a man to lie down. Thus, when the boards *b* and *b'*, which, in day-time lying on the benches *a* serve as seats, are turned over, two sleeping places, disposed across the compartment, for two passengers, of the compartment, are formed. 65

Two separate boards *b* and *b'* are employed in order that one passenger can lie down while the other remains sitting.

For greater comfort one side of the compartment is provided with an eminence, serving as a pillow. For this purpose on one of the partitions of the compartment are suspended below, on hinges *o'*, two short boards *m* and *m'*, connected by means of hinges with 70 the boards *n* and *n'*, which are placed behind the former. In day-time—*i. e.*, when the passengers wish to sit—these boards are pressed against the partitions by the cramps *v*, and at night they are turned over, so as to form an 75 inclined surface, serving as pillow, Fig. 5.

The concavity or hollow in the boards *b* and *b'* and in the bench *c* render sitting more comfortable and does not hinder comfortable lying down in the night when the sleeping places 85 are prepared, as the said concavity of the boards *b* and *b'*, when they are turned over, is underneath, and the concavity of the bench *c* is covered by the pillows *m* *n* and *m'* *n'*, as shown by Fig. 2. 90

The turning-boards *b* and *b'*, instead of placing themselves on the border of the bench *c*, can place themselves on a special slide-bar *n*<sup>3</sup>, fixed underneath the board *c*, as shown in Fig. 6. The height of the boards *b* and *b'* 95 from the floor in day-time exceeds that of the bench *c* in measure of the thickness of the board *b*. This small difference in height is even an advantage, as the passengers can choose at pleasure a higher or lower seat. 100

For the other two benches of the compartments two sleeping-places are established in the second range. For this purpose, on both partitions of the compartment, on a horizontal

beam placed therein, are suspended by the hinges  $o''$  two boards  $d$  and  $d'$ . Their length is such that when they are lifted to horizontal position their upper sides form one horizontal 5 level surface, leaving a small space between the ends of the boards  $d$ .

The suspended boards  $d$  and  $d'$  are kept in horizontal position on the front side, next to the central passage, by vertical rods  $f$  and  $f'$ , 10 and behind, next to the side of the car, by the pivoting-rods  $g$  for the hind boards  $d$  and by the slide-bars  $h$  for the front boards  $d'$ . One end of the vertical rods  $f$  and  $f'$  is fixed to the ceiling by screws and nuts, and the other, 15 ending in a hook, is in day-time hung at the ceiling, Fig. 1, and at night fixed to the free ends of the boards, taking hold of them underneath, Fig. 7. The pivoting-rods  $g$  are placed in a recess made in the side of the car 20 near the window and pivoted on a horizontal axis till they reach a horizontal position. The slide-bars  $h$  move in bent plates  $i$ , fixed underneath the boards  $d$ . The plates  $i$  are fixed underneath the boards  $d$ . The plates  $i$  are fixed 25 to the boards  $d$  by bolts, and besides are held by the vertical rods  $f$ , as shown particularly in Fig. 7. After lifting the two opposite hind boards  $d$  next to the side of the car the same are placed horizontally by means of the rods 30  $f$  and  $g$ . Thereupon the two opposite front boards  $d'$  next to the central passage are lifted and fixed horizontally by means of the rods  $f'$  and  $h$ . Thus, when the boards  $d$  and  $d'$  are lifted an upper range with a horizontal 35 surface is formed, where the other two passengers of the same compartment can lie down across the compartment exactly as in the lower range.

Two separate boards  $d$  and  $d'$  are employed for the sake that in case only one of the passengers wishes to lie down on the upper range 40 he only wants to lift the boards facing each other next to the side of the car.

In the upper range, as well as in the lower, when preparing the sleeping-places the pillows  $m\ n$  and  $m'\ n'$  are likewise prepared at 45 the same time.

The suspended boards  $d$  and  $d'$  when lifted and fixed horizontally, are at all their ends supported from below. When the weight on 50 top is increased the rods  $f$  and  $f'$  still stronger press the plates  $i$  against the lower side of the boards, whereby the stability of the upper range is still increased. The vertical rods  $f'$  and  $f$  at the same time protect the passenger lying at the free ends from falling down 55 from the upper range.

To prevent shaking of the suspended boards  $d$  and  $d'$  in day-time the hooks  $w$  are provided, which press them against the partitions. 60 Rods can be used for the suspended boards only on one side of the compartment, the opposite boards being supported by the first, either placing themselves directly on their border, as in the lower range, or on the projections of iron bars fixed to them underneath, 65

or for greater security on the one and the other at the same time, as shown in Fig. 8.

For facilitating the ascension to the upper range the iron step  $k$  is provided at the end of the bench, which at the same time serves 70 as an elbow-piece, and the cramp  $l$  at the front edge of the partition. The latter is taken hold of when going up.

For ascension to the upper range, when only one sleeping-place there is prepared—i. e., 75 when the boards facing each other next to the side of the car alone are lifted—a step is used, placed behind the suspended board  $d$  and turning on a horizontal or vertical axis.

Particular facility is obtained by use of a 80 step constructed as follows, Figs. 3 and 9: In the middle of the partition is placed vertically a wooden post or beam, serving at the same time as support for the horizontal beam on which are hung the suspended boards. In 85 a vertical cavity made in this beam is sunk an oblong plate  $p$ , connected by a hinge with the edge of the plate  $q$ . The plate  $q$  is fixed by bolts to the beam, and the plate  $p$  turns down on a hinge, forming a step. With the 90 free end of the plate  $p$  is connected by a hinge the prop  $r$ , the lower end of which is placed in the casing  $s$ . The front side of this casing is provided with a vertical slit, whose width is a little larger than the breadth of the 95 prop. It is thinner than the prop, the lower end of which is provided with the projections  $t$ , placed inside the casing. The hind side of the casing has an inclined position. This whole contrivance is sunk in the beam 100 in such a manner that the front sides of the prop and of the casing are on one vertical level with the front side of the beam. The plate  $u$ , which turns on a vertical axis, keeps the prop  $r$  and, together with it, the step  $p$  in 105 vertical position. When the plate  $u$  is turned, the prop  $r$  descends by its own weight, drawing along with it the step  $p$ . The lower end of the prop, kept by the projections  $t$  inside the casing, slides in the latter and bears against 110 its bottom, in consequence whereof the step takes the wanted horizontal position. A step of such construction offers the advantage that a passenger can easily arrange the same without any help, not alone when ascending to the 115 upper range, but also for descending. It only wants turning the plate  $u$ , placed near the upper range, and the step is ready.

Instead of a wooden beam an iron vertical 120 post can be used, in which case the construction of the step is as follows, Fig. 10: On the vertical post  $L$ , having an enlarged lower part  $L'$ , is set the muff  $B$ , with the step and support  $j$  fixed to the same. The muff is provided below with two notches  $d^x$  and the 125 lower cylinder is provided on top with the corresponding projections  $E$ . When one wishes to ascend to the upper range the step is turned so that the notches  $d^x$  place themselves opposite the projections  $E$ , the muff 130

descends, bearing on the widened part of the post, and then the step cannot turn in any direction. In both cases the step is covered in day-time by the suspended board *d*, and 5 does in no way hinder comfortable sitting.

The shelves *f*<sup>x</sup> or, instead thereof, hooks for the luggage, are fixed at the partition or the sides of the car.

I claim as my invention—

10 1. In combination in a sleeping car, the upper suspended boards *d d'* forming the upper couches or berths and the means for holding the same firmly consisting of the hanging rods *f f'*, said boards having the incisions or 15 sockets and the iron plates *i* about said incisions, substantially as described.

20 2. In combination in a sleeping car, the upper and lower berths, said upper berth comprising the short suspended boards *d d'* forming two separate upper couches, said boards resting upon each other at their edges, substantially as described.

25 3. In combination in a sleeping car, the partition comprising the vertical beams and the step *x* having the ring *B* adapted to turn thereon, said ring having the notches *d x* at the bottom adapted to engage the projections

E on the beam when the step is turned around for use, said step being turned when not in use against the partitions, substantially as described. 30

4. In combination, in a sleeping car, the upper berths composed of boards *d d', d' d'* hinged to the section partitions the suspending bars *f f'* for the pairs of hinged boards *d d'* respectively, having hooked lower ends engaging the front or outer edges of the said boards, the pivoting rods *g* secured to the car sides for engaging and supporting the inner pair of boards, the slide bars *h* for supporting the 40 inner edge of the outer pair of boards from the outer edge of the inner pair and the plates *i* for holding and guiding the slide bars, said plates serving also as wear plates for the lower hooked ends of the suspending rods, substantially as described. 45

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

ISAAC BER GÜNZBURG.

Witnesses:

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J. FLIERLING.