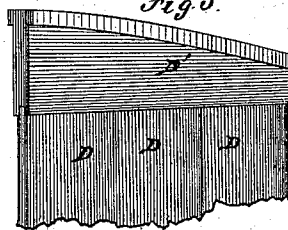
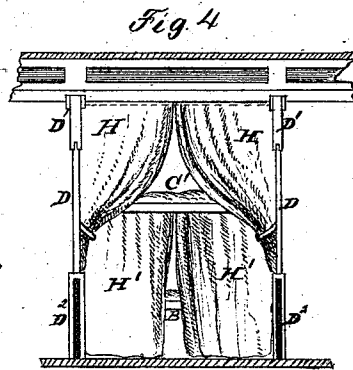
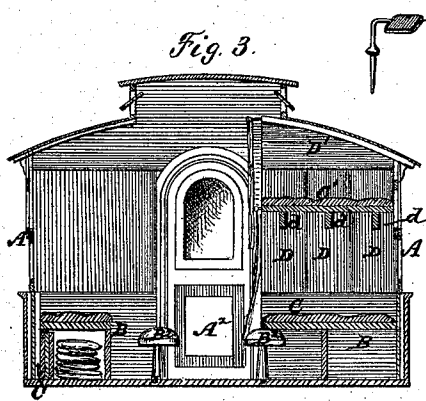
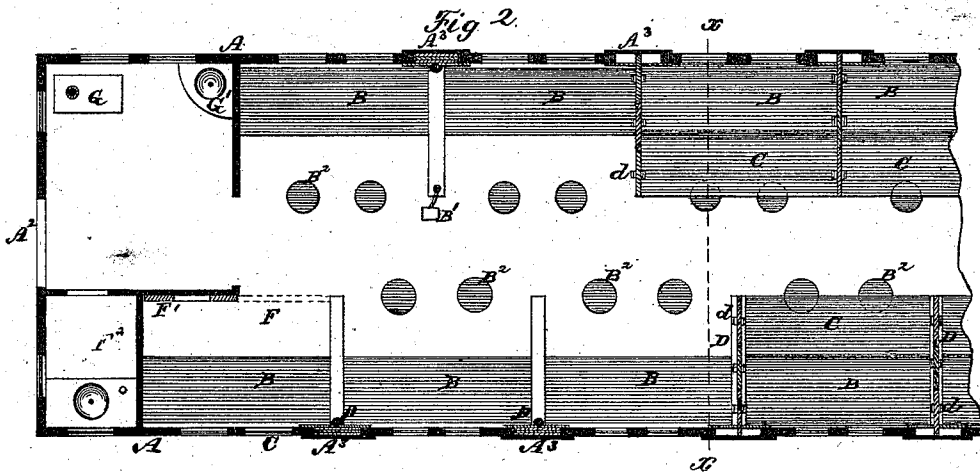
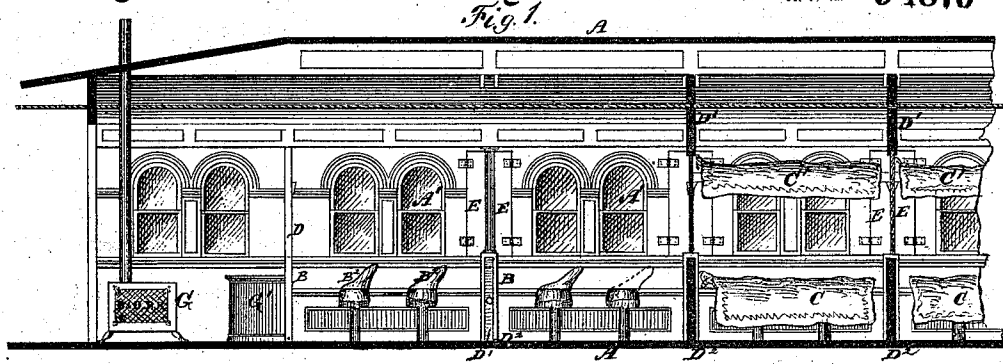


G. S. Koonitz & J. B. Hill
 106178 *Sleeping Car* PATENTED AUG 9 1870



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Fig. 6.

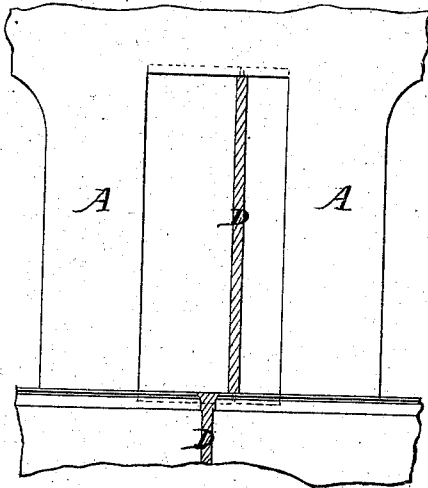


Fig. 7.

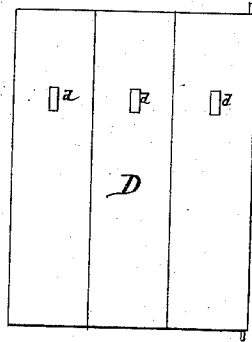


Fig. 8.

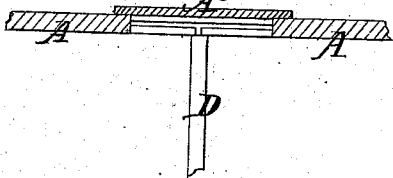


Fig. 9.

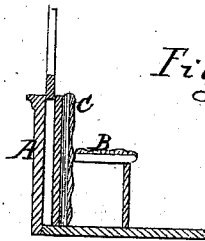
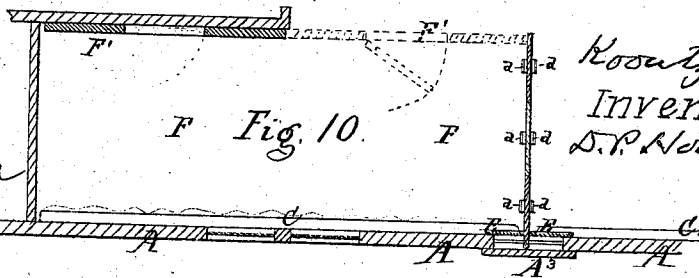


Fig. 10.



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Letters Patent No. 106,178, dated August 9, 1870.

IMPROVEMENT IN SLEEPING-CARS

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, GEORGE S. KOONTZ and JOHN B. HILL, of Washington, in the county of Washington and in the District of Columbia, have invented a new and useful Improvement in Sleeping-Cars; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is an inside view of a portion of our improved car, showing one section as it appears when used as a day-car, and one as it appears when used as a sleeping-car, the berths being shown in their positions for occupation.

Figure 2 is a plan view of the car, a portion of the folding partitions being shown folded into the recessed panels, and a portion of them in position for use.

Figure 3 is a vertical transverse section, on line *x* *z* of fig. 2, the right-hand side showing the berths in position, and the method of arranging the curtains, and the left-hand side the beds in the receptacle in which they are placed in the day-time.

Figure 4 is a sectional elevation of the inside of the car, showing the recess for the reception of the upper portion of the folding partition, and the method of arranging the curtains.

Figure 5 is a side view of a portion of one of the folding partitions, showing how the upper sliding portion is attached thereto.

Figure 6 is a part of the inside of the sleeping-car, showing the recess into which the folding partition may be placed.

Figure 7 shows the folding partition, provided with pins, which move in slots or recesses, as shown in dotted lines in fig. 6.

Figure 8 is a plan view of a recess in the wall of the sleeping-car, showing the slot into which the pins of the folding partition are secured.

Figure 9 is a vertical section of the seat of the sleeping-car, showing the adjustable back of the seat.

Figure 10 is a plan view of a part of the car, showing the adjustable partition, which, in combination with the folding partition, forms an inclosure or state-room.

Corresponding letters refer to corresponding parts in the several figures.

In sleeping-cars as heretofore constructed great difficulty has been experienced from the fact that, when used as a day-car, a portion of the passengers has been compelled to ride backward, and also from the fact that berths, or a portion of them, have at such times been made to occupy room in the upper portion of the car, thus, to a considerable extent, interfering

with the comfort of the passengers, and with the proper ventilation of the car.

The object of this invention is partially to provide a remedy for the above-recited objections, and partially to provide a car which shall afford a better ventilation to all of the berths when being used as a sleeping-car, and, further, to provide a car which shall give more room for exercise, and afford greater facility for a change of position when being used as a day-car; and to this end,

It consists in the construction, combination, and arrangement of some of its parts, as will be more fully explained hereinafter.

A in the drawing refers to the frame or body of the car, which externally may be of any desired or usual finish, and of any dimension that will meet the views of the constructor, the only change in said external parts made necessary by our improvements being the raised panels for the reception of the folding partitions, both of which are soon to be described.

A¹ A² refer to the windows, which may be of the style shown in the drawing, or of any other style.

A³ refers to the door, there being one in each end of the car, for the ingress and egress of the passengers.

A⁴ A⁵ refer to raised panels, the raised portion being upon the outer surface of the car, as a consequence of which arrangement a recess is left upon the interior surface thereof, into which the partitions D are folded when not in use, as shown in fig. 2.

B B refer to seats which extend longitudinally from one of the partitions D² to another, their length being such as to permit a person to lie down upon them when they are used as berths. These seats are constructed as shown in fig. 3, or so that there is a space left within them, for the reception of the mattresses and other portions of the beds when it is desirable to put them out of the way in the day-time, the upper or cushioned portion of the seat and the back or side portion, which is also cushioned, forming the lower bed when placed in the position shown in figs. 1, 2, and 3, or may be used for the upper berths. The cushioned backs of these seats are of greater width or depth than is necessary to enable them to form such backs, and, consequently, when they are in position to be used for that purpose, their lower edges extend downward into a recess formed in the side of the car, so that, when placed in said recess, their upper edges shall not project above the proper point.

B¹ refers to a step, which may be used, as shown in fig. 2, by being attached to the hollow partitions, to make the ascent into the upper berths more easy, and prevent the necessity of the person so ascending stepping upon the berth below.

B² B² refer to chairs, which are placed in the space between the longitudinal seats, as shown in figs. 2 and 3. These chairs, or a portion of them, are so placed that, when the outer cushioned portion of the seat is taken out of its vertical position at the side of the car, and placed in its horizontal position, as shown at C in fig. 3, it shall extend from about the center of the seats B² to the upper cushioned portion of the seat B when it is in its usual position, and thus constitute a bed or berth of sufficient width to accommodate two passengers. The portions of these seats B² which constitute the backs, as they are shown in fig. 1, are removable, so that, while they constitute an easy revolving chair in the day-time, the backs may be removed, and placed in the recesses of the seats at night, and that portion shown in fig. 3 made to serve the purpose thus indicated, it being provided with a screw, for raising or lowering it at pleasure.

It is apparent that, in consequence of the combination of these rotating and fixed seats, great facility is afforded for changes of position during the day-time by changing from one to the other, and also that, as a consequence of this peculiar arrangement of the seat and berths, a much larger amount of room is afforded for standing or promenading than is found in the cars now in use.

C C refer to the cushioned backs of the longitudinal seats, they being shown in the position to be used as seats, and as berths in figs. 2 and 3.

C' C' refer to the upper berths, which are supported upon the folding partitions soon to be described. They consist of any suitable frame-work, or of slats; or it may be the cushioned backs made of such a length as to be placed in the recess in seat B when not in use, and of such width as that a single or double berth may be made upon them. Upon these frames or boards mattresses are placed, and proper bed-clothing to constitute beds, such as shown in figs. 1, 3, and 4.

D D refer to folding partitions, which are so constructed and hinged together as to fold into the recesses formed in the raised panels A³, as shown in fig. 2.

That portion of these partitions which is upon the inside of the panel or recess when folded may be provided with pins in its ends, so as to slide in grooves formed in the top and bottom of the recess into which they fold, so that when said portion is slid upon such pins to the center of the recess in the said panel, it shall be held in position or prevented from coming out.

When this folding partition is in the central position above alluded to, it is directly over, and its outer portion will rest upon the fixed and hollow portion D², as shown in fig. 4, and together with it and the sliding portion D¹, will form the partition between the berths and, the support for the upper berths to rest upon, they being supplied with springs *d* for that purpose, which are so arranged that when the panels are folded together, they will enter recesses formed in the partitions; but, when said partitions are in position for use, they will project far enough to support the berths.

D¹ D¹ refer to the sliding portions of the partitions, and they consist of panels or pieces which have a groove formed in their under surfaces to receive tenons or projections formed upon the upper ends of the folding portions of the partitions, their upper surfaces being of such form as to fill the space between said upper ends of the folding partition and the roof of the car, as shown in fig. 3.

The length of these sliding panels or pieces, and the width of the folding partitions, is such, that when they are in positions to form berths, they will project inwards beyond the raised portion of the roof of the car, so that a portion of the air which enters through

the ventilators in said raised portion shall be directed into the upper berths and be retained therein, and not allowed to pass directly to the ends of the car, as is usual.

D² D² refer to the fixed portions of the partitions, their length and height being such as to permit them to receive into a cavity or recess formed in them the sliding portions, D¹, of the partitions, when not in use, one being shown in such recess in fig. 1.

Another office of these fixed portions is, to form arm-rests for persons who may be occupying the longitudinal seats.

E E refer to doors or swinging panels, which are hinged to the edges or sides of the recesses formed in the raised panels, so that when the folding partitions are placed therein these panels may be shut and fastened by any suitable device, and thus that portion of the car presents an appearance similar to other panels. These doors or swinging panels, also serve the purpose of supports to the folding portions of the partitions when in position to be used as berths, by being closed so far as to come in contact with such partitions, and secured there by hooks or other suitable devices, thus keeping the outer sections of the partition in its central position. The above-indicated position and function of these doors are clearly shown in fig. 1 of the drawing.

F refers to the saloon of the car, which may be converted into a private apartment by placing one of the partitions in position, and sliding the partition F' outward, as shown in dotted lines in fig. 2, said sliding partition being provided with a swinging door for ingress and egress. When thus used as a private apartment, the saloon may be furnished with berths if desired, or it may be provided with seats only. When it is desirable to throw the saloon open or convert it into a public room, the folding partition, is put away as the others are when not in use.

The partitions F' slide back, as shown in full lines in fig. 2, and the saloon becomes a part of the car, to be occupied by any one that may desire to be seated there.

F'' refers to a separate apartment, which is formed by a partition placed at the outer end of the saloon, and which extends from the floor to the roof of the car, so as to make this apartment entirely separate from said saloon. This apartment may be used as a water-closet, it being provided with the usual appendages.

G refers to a stove, which may be placed in the end or ends of the car, and opposite the water-closet or closets, and near it the wash-bowl or sink, as shown in fig. 2.

H H refer to the curtains of the upper berths, they being suspended upon rods which extend from end to end of the car, which rods are supported at proper intervals by hangers attached to the roof of the same. These curtains are provided with hooks or other suitable devices for attaching them to the rods, and extend downward to a point a little below the berths, but not far enough to interfere with the occupants of the lower berths, the object being that the curtains of the upper berths may be drawn aside, while those of the lower ones are in position to shield the occupants from observation.

H' H' refer to the curtains of the lower berths, which are suspended upon rods attached to the folding partitions, and extend downward nearly to the floor of the car, they being arranged so as to be used without reference to the upper ones.

One of the advantages incident to our invention, and not before mentioned, is, that we are enabled to construct the windows in two sections, the upper one of which may be moved upward, and the lower one downward, and thus leave the space for the entrance of air at or near the center of the window, and above

the faces of the occupants, which will, to a great extent, prevent the dust and sparks which enter with the air from passing into the eyes of such occupants.

Having thus described our invention,

What we claim, and desire to secure by Letters Patent, is—

1. The combination of the folding portions D D of the partitions, and the recesses formed in the raised panels, when the partitions are held in said recesses by means of journals or pivots formed upon their ends, substantially as and for the purpose set forth.

2. The partitions between the berths, consisting of hollow portions D², folding portions D, and sliding portions D¹, or their equivalents, substantially as and for the purpose set forth.

3. The spring *d*, in combination with the folding portion of the partition, substantially as and for the purpose set forth.

4. The longitudinal seats B and chairs B², when arranged with reference to each other substantially as and for the purpose set forth.

5. The sliding partition between the state-room and the other portion of the car, having in it a swinging door, when arranged with reference to the folding partition, substantially as and for the purpose set forth.

6. The sliding backs of the longitudinal seats, when constructed and arranged substantially as and for the purpose set forth.

7. The swinging panels or doors E E, when arranged with reference to the folding portions D D of the partitions, substantially as and for the purpose set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GEO. S. KOONTZ.
J. B. HILL.

Witnesses:

E. J. KLOPPER,
J. H. WISE.