2 Sheets—Sheet 1.

T. T. WOODRUFF.

Car Seat and Couch.

No. 24,257 Patented May 31, 1859.

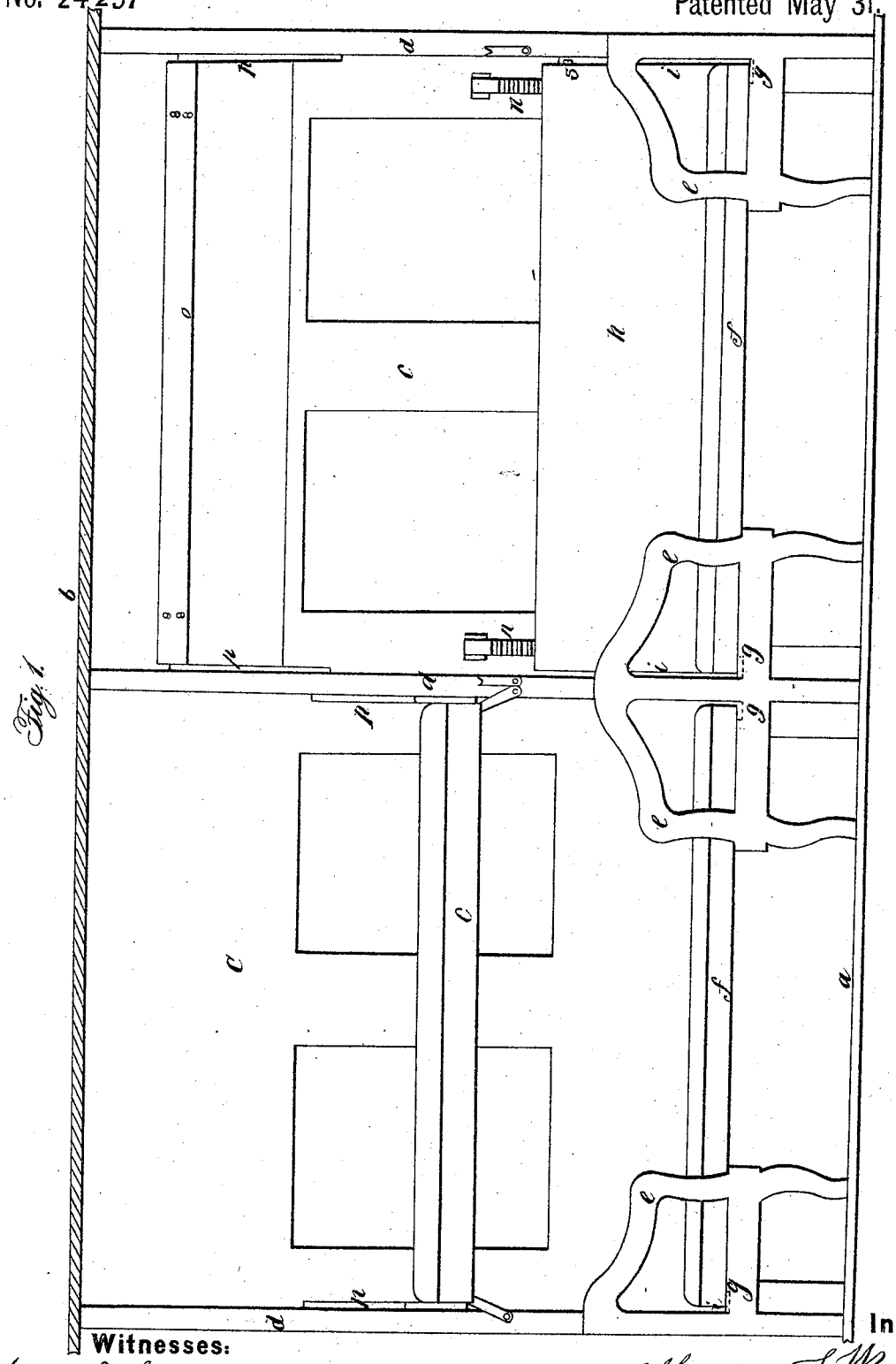


Fig. 1.

Witnesses:

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Wm. A. Burdett

Inventor:

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AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS.)

2 Sheets—Sheet 2.

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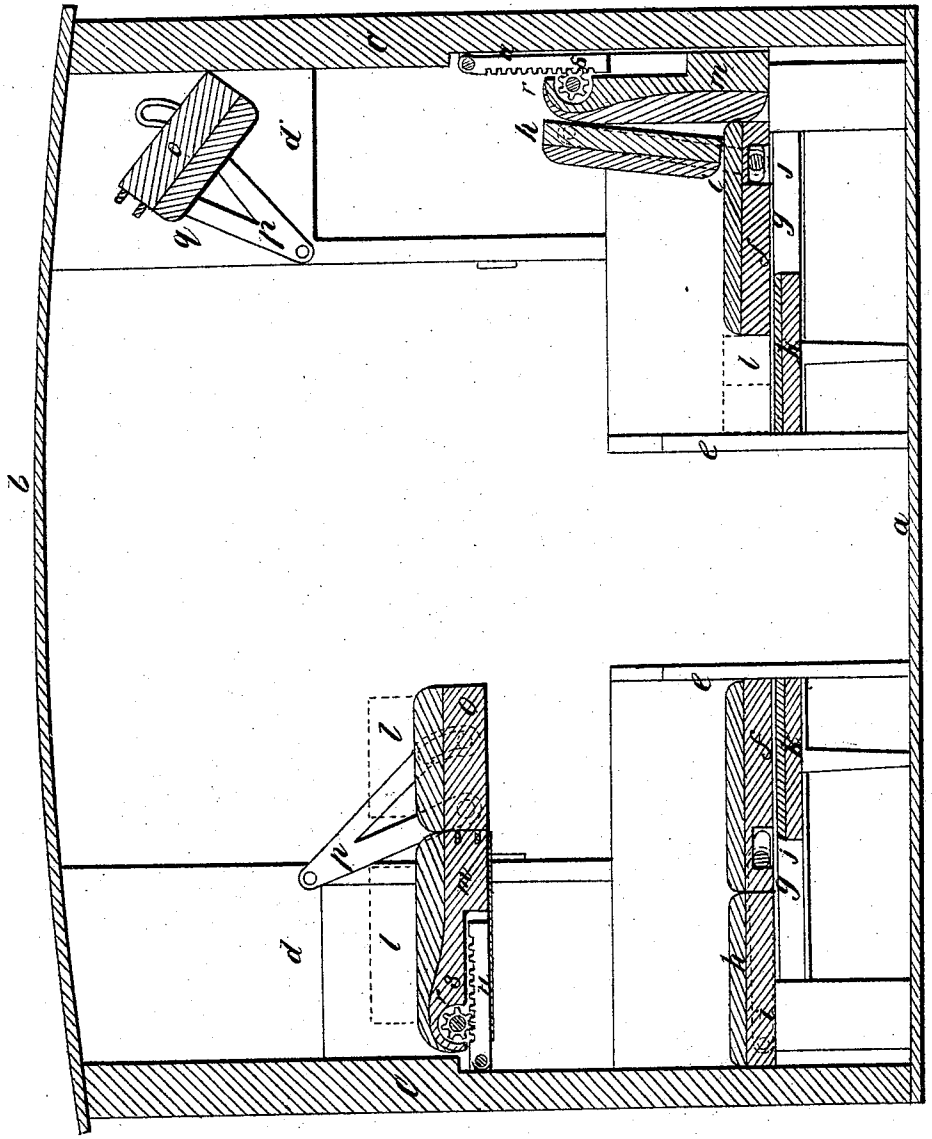


Fig. 2.

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UNITED STATES PATENT OFFICE.

THEODORE T. WOODRUFF, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN SEATS AND COUCHES FOR RAILROAD-CARS.

Specification forming part of Letters Patent No. **24,257**, dated May 31, 1859.

To all whom it may concern:

Be it known that I, T. T. WOODRUFF, of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Combined Seats and Couches for Railroad-Cars; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a central longitudinal vertical section of a railroad-car with my improvements, representing one compartment arranged for seats, and the other compartment arranged as couches; and Figure 2 is a cross vertical section of a car, representing the seats on one side and the seats converted into couches on the other side.

The same letters indicate like parts in both figures of the accompanying drawings.

My said invention relates to improvements in the arrangement of seats in railroad-cars in such manner that they can be readily converted into sleeping-couches; and the first part of my invention consists in forming two couches by the combination of two frames, one of which is employed for seats, and the other for the backs of the said seats when arranged for seats, the ends of both of the said frames being fitted to rest on suitable cleats or rests attached to the partitions or end frames of the compartment of a car; and the second part of my invention consists in connecting the frame which forms the seats with the frame which forms the backs by means of links connected with one of the frames by means of a sliding hinged joint, and with the other by a hinged joint, whereby the two frames so connected can be more readily shifted from seats to couches and vice versa, and by means of which also the back-frame can be used as a couch either behind or in front of the seat-frame; and the third part of my invention consists in the use of sliding auxiliary frames which slide under the frame for the main seat, so that when the frame for the main seat is put back to be used as seats the auxiliary frames can be drawn forward to make end seats in front of the main seats, or pushed back under the main frame that this latter may form a continuous sofa for four persons to sit on in a row; and the fourth part of my invention, which relates to the method of forming the elevated couches, consists in the employment of a frame for an elevated couch, combined with and attached to the frame of the car, or suitable partitions in the car, by means of hinged bars, on which the said frame slides down below the windows and out of the way when not used as a couch, and pushed back when thrown up for an elevated couch, that one of its edges may be placed against the car-frame; and this part of my invention also consists in combining, with the foregoing hinged frame or any equivalent therefor, another frame, connected, by suitable links or other means, with the frame of the car, so that when not used as a couch it can be thrown up toward the roof, and when let down in front of the before-named hinged frame to form, in connection therewith, a double elevated couch for two persons.

In the accompanying drawings, *a* represents the floor of a railroad-car; *b*, the roof; *c c*, the sides; and *d d* transverse partitions dividing the car into compartments, each capable of accommodating four passengers, whether sitting or lying down, there being a series of such compartments on each side of the car, leaving the usual passage-way between them.

As all the compartments of the car are provided with the same arrangement of convertible seats the description of one will be sufficient for all, and the better to explain the mode of construction and arrangement, I have represented in the accompanying drawings two compartments, one with the seats and the other with the seats converted into couches suitable for four persons, so that in a car arranged on the plan of my said invention the same number of persons can either lie down or sit up. Each compartment is provided at the inner edge with a suitable frame-work, *e e*, to afford the requisite supports, and to answer as arms for persons occupying the inside or auxiliary seats. There is in each compartment a frame, *f*, of the length of and fitted to move freely between the partitions of the compartment, and of sufficient width to form either a couch for one person or a sofa-seat for four persons, and this frame is to be suitably upholstered to answer both purposes. The ends of the frame so made and prepared rest on ways *g g* projecting from the partitions extending from the side of the car *c* to the arm-frames *e* along the central passage-way, and it can slide thereon toward or from the side of the car. To this frame is connected another frame, *h*, of like construction and similarly upholstered, although it may be differently

upholstered to be suitable for the back of the sofa, provided it be also suitable to form a couch. These two frames are connected by two joint-links, *i*, one at each end, the said links being pivoted by one end to the end of the back frame and near the lower edge thereof, or rather near that edge which forms the lower edge of the back, and the other end of the said links are connected with the ends of the sofa-seat frame *f* by means of hinged sliding joints. These sliding joints I prefer to make, as represented in the drawings, by means of a rod, *j*, which passes through the whole length of the frame and fitted to slide transversely in slots made for that purpose in the ends of the frame, the links being secured to the ends of this rod outside of the ends of the frame, so that the rod cannot slide longitudinally in the frame, but is free to turn and to slide transversely in the slots. The object of connecting the links with one of the frames by means of such sliding joints is to admit of turning down the back-frame on the same plane with the seat-frame to make a double couch, and in doing this to place it either in front of or behind the seat-frame; but although I prefer to connect the said frames by means of links they may be used without connecting-links, but in that case they cannot be transformed so readily from seats into couches or vice versa. As these frames rest on ways or cleats projecting inward from the partitions, they can be moved thereon readily to place them in either of the positions represented in the drawings.

Below the sofa-frame there are two small auxilliary seat-frames, *k k*, placed under and one at each end of the said sofa-seat frame, and connected with the partitions each by a suitable slide; and when the sofa-frame is placed in position as a seat these auxiliary seat-frames may be either pushed back under the sofa-seat frame, that four persons may sit side by side on the sofa, or they or either of them may be drawn out to form one or two seats in front of each end of the sofa-seat; and as these auxiliary seat-frames are lower than the sofa-frame their upper surface may be upholstered to form two low seats for children; or the cushions, used as bolsters *l l* when the seats are arranged as couches, may be placed on these seats to form seats of the required height for adults.

A third frame, *m*, denominated the "elevated couch-frame," is adapted to slide on bars *n*, hinged to the side of the car. By these means this frame can be turned down parallel with the side of the car, and let down below the windows of the car and back of the sofa-back, to be out of the way, and when wanted for a couch it can be elevated and thrown out horizontally and held in place by suitable catches to form a couch so high above the lower couches, above described, as to give free access to them.

A second elevated couch is formed of another frame, *o*, suitably upholstered, which is suspended by hinged links *p p*, so that when not wanted for a couch it can be turned up, as represented at *q*, and when wanted it is turned down in front of and on the same plane with the first described elevated couch, so that the two together will constitute an elevated couch of sufficient width for two persons. To secure the two frames in the required position the inner edge of the outer one is provided with what may be termed "dowel-pins," which enter corresponding holes in the front edge of the back one.

To facilitate the drawing up and letting down of the back elevated couch *m*, the hinged bars on which it slides are formed with rack-teeth on one surface, which engage the cogs of pinions *r* on a shaft, *s*, mounted in the frame, to the end of which a crank-handle can be applied, by the turning of which the frame can be drawn up or let down; but this may be dispensed with.

The mode of hanging and throwing up the front elevated couch, *o*, may be modified at the pleasure of the constructor, so long as the mode of application is such that it can be let down in front of the other elevated couch, and when not wanted as a couch that it can be thrown up out of the way toward the roof of the car.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination and arrangement of the two frames with each other and with the supports therefor connected with each compartment of a car, the said frames when spread out forming couches for two persons on the same level with the seats, and when transformed one of the said frames forming seats and the other the back for such seats, substantially as described.

2. Connecting the frame which forms the seats with the frame which forms the backs by means of links connected with one of the said frames by means of hinged joints, and with the other of the said frames by means of sliding hinged joints, substantially as and for the purpose specified.

3. In combination with the frame for the main seats, the auxiliary seats which slide under the frame for the main seats, substantially as and for the purpose described.

4. The frame for an elevated couch when combined with the car by means of sliding hinged joints, substantially as and for the purpose specified.

5. In combination with the elevated couch next to the side of the car, or the equivalent therefor, the front elevated couch so connected with the car, substantially as described, as to admit of being let down to form part of a double couch, and thrown up toward the roof of the car when not wanted as a couch, as set forth.

THEODORE T. WOODRUFF.

Witnesses:

ANDREW DE LACY,

WM. H. BISHOP.