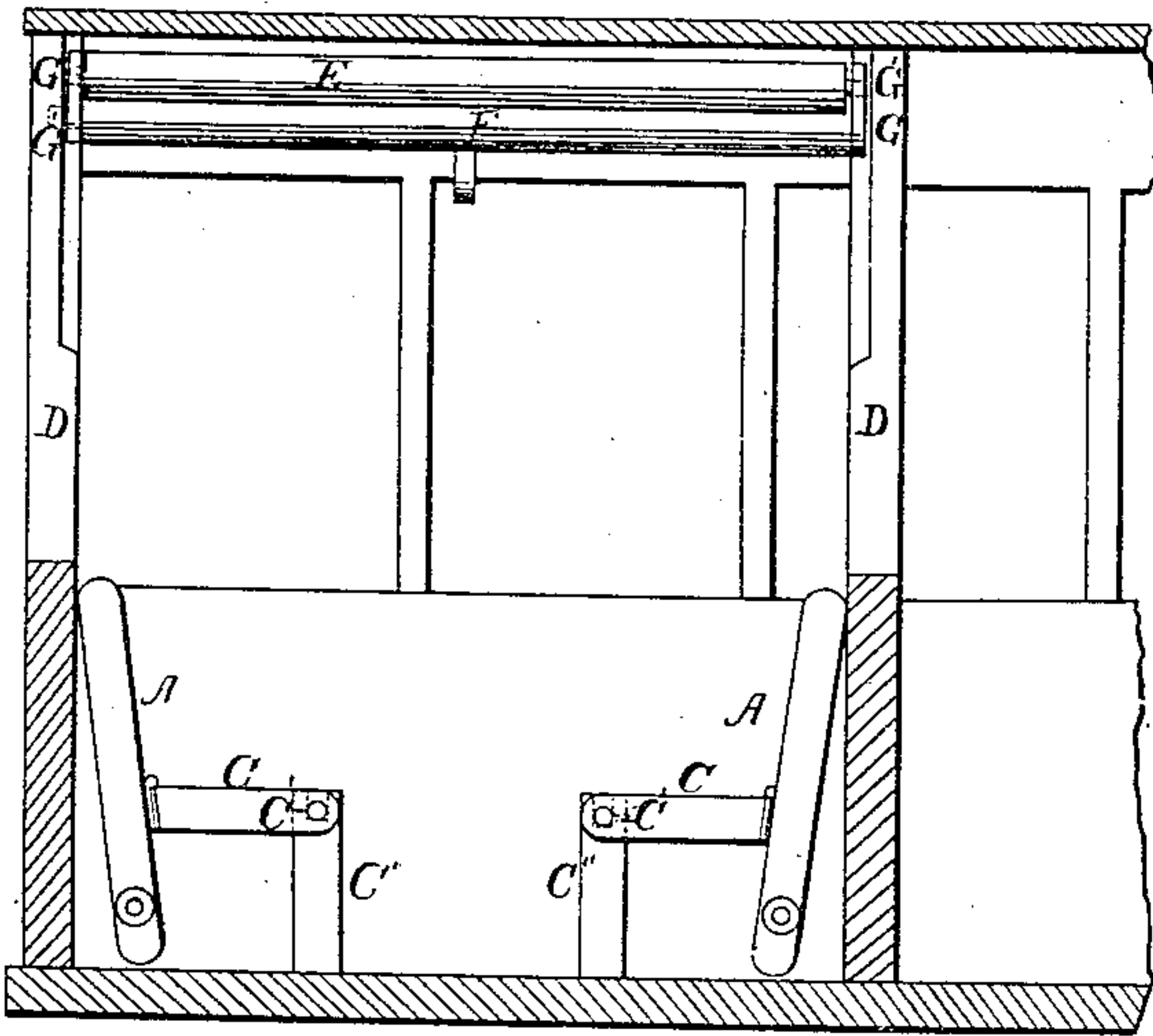


S. C. CASE.  
RAILROAD CAR SEAT AND BERTH.

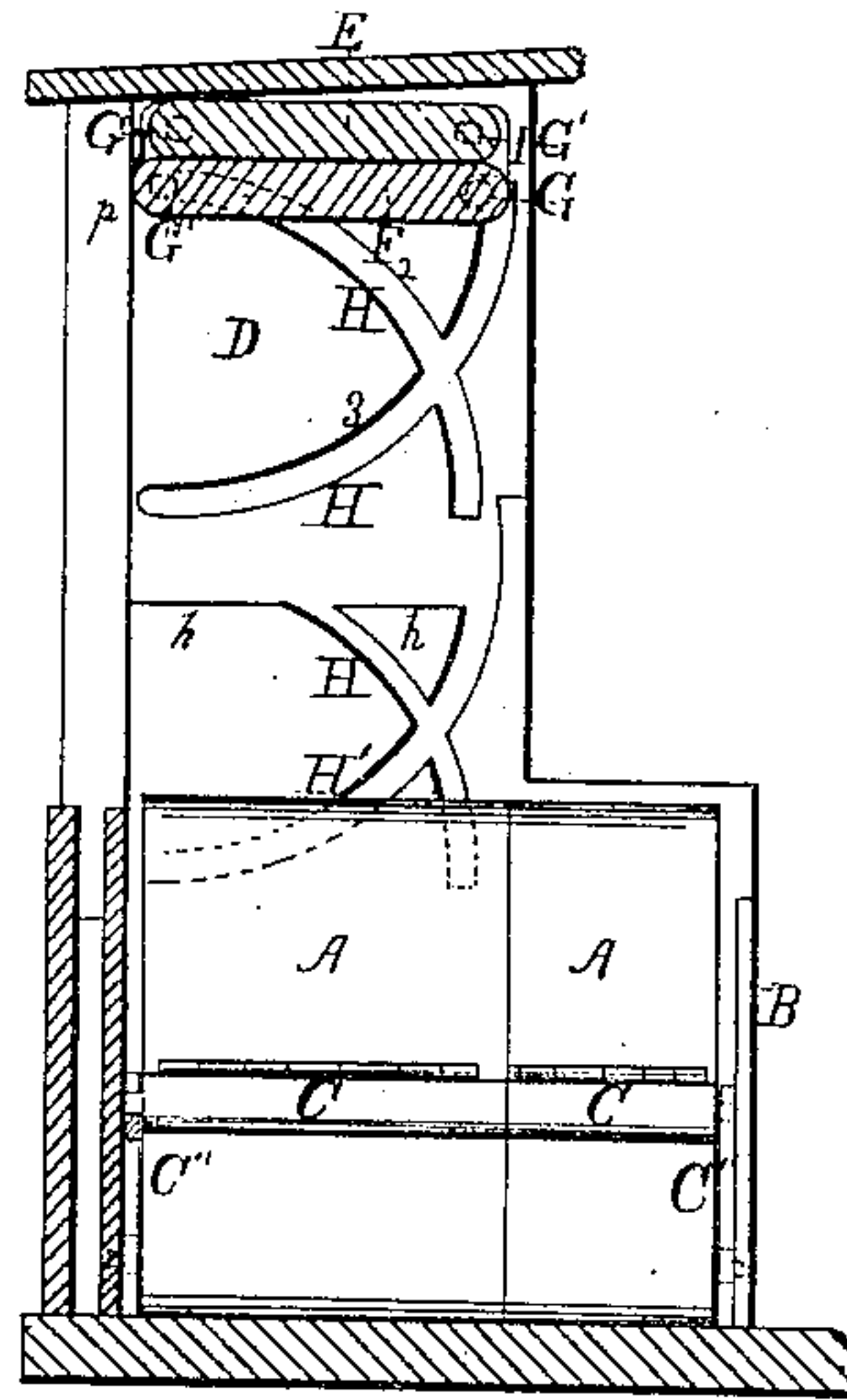
No. 20,622.

Patented June 22, 1858.

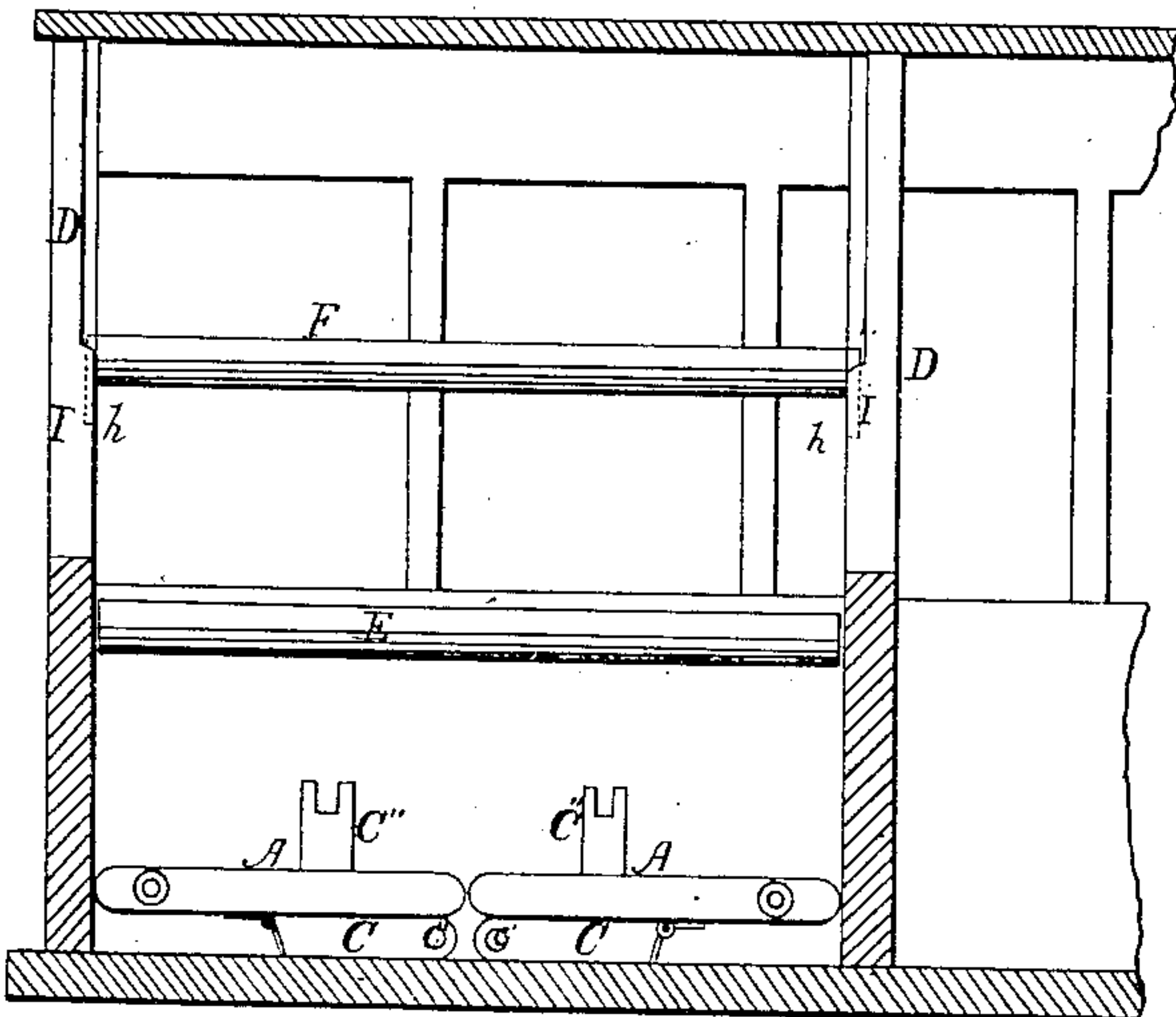
*Fig. 1*



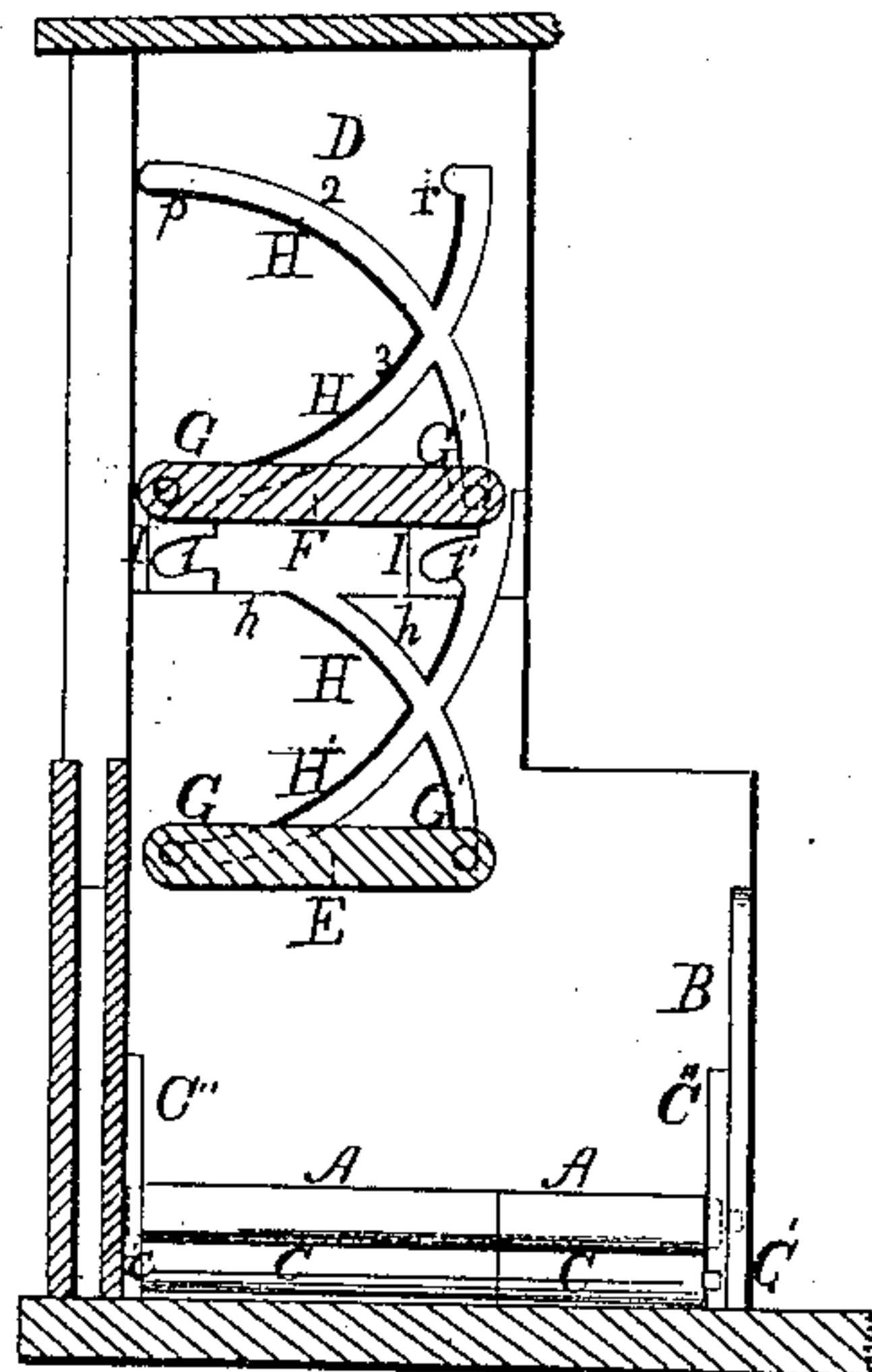
*Fig. 2*



*Fig. 3*



*Fig. 4*





# UNITED STATES PATENT OFFICE.

S. C. CASE, OF DETROIT, MICHIGAN.

## RAILROAD-CAR SEAT AND BERTH.

Specification of Letters Patent No. 20,622, dated June 22, 1858.

*To all whom it may concern:*

Be it known that I, SIDNEY C. CASE, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful improvement in railroad-cars for enabling the seats in the same to be readily converted into sleeping-berths and other sleeping-berths to be formed above the same; 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.

Figure 1, is a vertical longitudinal section of a portion of the body of a railroad car, showing a side view of two sets of seats, and the upper berth platform raised to the ceiling of the car. Fig. 2, is a transverse section of ditto. Fig. 3, is a vertical longitudinal section of the same, with the upper berth platforms lowered, and seats folded and lowered, to form sleeping berths for four persons. Fig. 4, is a transverse section of ditto.

Similar letters in the figures refer to corresponding parts.

The nature of this invention and improvement consists in so forming and suspending the seats in rail road cars, as to enable them to be folded downward to the floor, and to be thus converted into a single or a double sleeping berth, and in arranging upright partitions between the backs of the seats, on the sides of which are formed segmental grooves and ledges, in which projections on the ends of the berth platforms move, in such a manner as to enable the berth platforms to be brought to such positions between the partitions as to form two additional berths, and to be connected and raised out of the way to the ceiling of the car, when not designed to be employed for this purpose.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and manner of operating the same.

The backs of the seats A, extend downward below the seat portion to near the floor of the car, and are suspended near their lower parts on pivots projecting from their sides, and entering corresponding boxes secured in the sides of the car and in upright frames or partitions B, which form the ends of the seats next the longitudinal passage way through the car. The horizontal seat portions C, may be attached to the back A, by

the ordinary butt hinge or any mechanical equivalent therefor in such a manner as to enable them to be raised and folded against and parallel with the backs A, as represented in Figs. 3 and 4, or brought to a horizontal position with the pins C', on their ends next the outer edges, resting in mortises formed in lugs or projections C'', secured to the sides of the car and the sides of the end partitions B, of the seats.

Between the backs of each two pairs of seats, are arranged upright transverse partitions D, extending from the floor to the ceiling of the car, and at its lower part from the sides of the same to the longitudinal passage way through the car, being attached at this part to the upright partitions B, forming the ends of the seats. Between these upright partitions D, are placed two horizontal berth platforms E, F, nearly equal in width and length to the width of the upper part of the partitions D, and the distance they are situated apart, on the ends of which berth platforms are secured metallic plates, from near the ends of which project small round and oblong pins or studs G, G', which enter peculiar shaped grooves H, H', H<sup>2</sup>, H<sup>3</sup>, formed in the sides of the partitions as represented in Figs. 2 and 4, or formed in castings or plates secured to the same. When it is designed to use these berth platforms they are brought to the positions represented in Figs. 3 and 4 with the pins or studs G, G', on their ends resting in the lower ends of the grooves H, H', H<sup>2</sup>, H<sup>3</sup>, the round pins G, being situated near the outer edges of the platforms E, F, the oblong pins or studs G', being in reverse positions or situated near the inner edges of the said platforms.

The segmental grooves H, in which the oblong pins or studs G', of the lower berth platform E, traverse, extend from near the inner edge of the upright partitions D, upward and outward on a circular curved line, scribed from the lower end of the grooves H', while the latter grooves H', curve inward and upward on a line scribed from points immediately above the lower ends of the grooves H, the said segmental grooves H, H', being thus made to intersect each other as they approach the edges of the upright transverse partitions D. The upper ends of these lower grooves H, H', terminate before they reach a full quarter circle and the projecting body of wood or metal



attached to the partition in which they are formed, also terminates with them, so as to form horizontal ledges *h*, projecting from the face of the partitions above the grooves *H*, *H'*, the same distance as the depth of said grooves. The segmental grooves *H*<sup>2</sup>, *H*<sup>3</sup>, in which the round and oblong pins or studs *G*, *G'*, of the upper berth platform respectively traverse, form parts of circles, scribed respectively from their outer ends in the same to the lower corresponding grooves *H*, *H'*, the upper end of the grooves *H*<sup>2</sup>, in which the oblong pins or studs *G'*, traverse being reduced slightly in width so as to form an abrupt projection *p*, for tilting the upper berth platform as will be hereinafter described, and the upper end of the other grooves *H*<sup>3</sup>, being turned toward the side of the car and extended downward slightly, so as to form a rest as shown at *r*, Fig. 4, for the round pins *G*, of the upper berth platform *F*, when raised to the ceiling. The edges of the plates on the ends of the upper berth platform *F*, have projections *I*, *I'*, extending from near their ends which rest on the ledges *h*, at the upper ends of the lower grooves *H*, *H'*, and serve with the pins of the said upper berth platform, to support the same when designed to be used. In these projections *I*, *I'*, are formed grooves *i*, *i'*, extending parallel to the ledges and situated, when brought next said ledges, in such relation to the curves and tops of the lower grooves, as to enable the pins on the ends of the lower platform to enter the same.

In Figs. 3 and 4, the seats are folded and lowered on to the floor to form a double sleeping berth, and the upper berth platforms *E*, *F*, are brought down to form two additional single ones, for accommodating the four passengers for which the seats when raised are designed. When it is required to remove these upper single berths *E*, *F*, and convert the lower double one into two sets of seats for four, the inner edge of the lower berth platform *E* is raised, while the outer edge remains stationary, and the round pins or studs *G*, next the same rests on the lower end of the slots *H'*, and serve as a center upon which the said platform *E*, moves. After the oblong pins or studs pass above the upper ends of the slots *H'*, and strike the lower corners of the slots *i*, in the projection *I*, the lower edge of the platform *E*, is raised, and made to scribe a segment of a circle,—the oblong pins or studs *G'*, resting on the corners of the slots *i*, being now made to serve as a center of the circle upon which it moves and the round pins or studs *G*, moving in the slots *H* as guides. The two platforms *E*, *F*, are thus brought together, with the pins and studs *G*, opposite the slots *i'*, in the other projection *I*, when the said pins or studs

*G*, *G'*, are forced into said slots *i*, *i'*, and the two platforms *E*, *F*, are thus connected together. The edges of the two platforms next the center of the car are then raised together, in a corresponding segment of a circle to that upon which the lower platform previously moved, the pin or stud *G'*, near the outer edge of the upper platform *F*, now resting in the lower end of the slot *H*<sup>3</sup>, and serving as a center upon which both platforms are moved, until the lower part of the oblong pins or studs *G*, *G'*, which pass through the slots *H*<sup>2</sup>, and act as guides, strike the abrupt edge or corner *p*, of the reduced upper end of the slot *H*<sup>2</sup>. The lower edges of the platforms are now raised on a segment of a circle with the round pins or studs *G*, passing through the slots, *H*<sup>3</sup>, and the oblong pins or studs *G'*, resting on the corners of the projections *p*, in the slots *H*<sup>2</sup>, to serve as fulcrums until the flat surface of the platform *E*, is brought next the ceiling of the car, when the two are forced toward the side of the car, and the pins or studs *G*, *G'*, are made to respectively enter the reduced portion *p*, of the slot *H*<sup>2</sup>, and the horizontal and extended portion *r*, of the slot, which suspends the said platforms entirely out of the passengers' way, as represented in Figs. 1 and 2. The seat backs *A*, are then raised on their pivots, with their upper ends against the transverse partition *D*, and their seats *C*, brought down to the horizontal position represented in the figures just mentioned, the pins *C'*, on their ends entering the corresponding mortises, serving as supports for their vibrating edges. In lowering these platforms *E*, *F*, to the position represented in Figs. 3 and 4, to form sleeping berths, they are drawn toward the center of the car, until the pins *G*, are clear of the dropped and horizontal portion *r*, of the slots *H*<sup>3</sup>, and the said pins *G*, are traversed through the same to their lower end, and the other oblong studs *G'*, are traversed to the lower ends of the slots *H*<sup>2</sup>, when the lower platform *E*, is drawn toward the center of the car so as to clear its pins *G*, *G'*, from the slots *i'*, of the projections *I'*, when its inner and outer edges are respectively lowered, in directly opposite directions to the curves in which they were previously raised, until brought to the position represented in Figs. 3 and 4. In this manner sleeping berths capable of accommodating four persons can be formed, by the seats designed for an equal number, and the berth platforms, and these latter can be suspended out of the way next the ceiling of the car, when not desired to be thus employed.

Instead of making the outer portions of the seats, wider than the inner ones as represented, they may be made of equal widths and provided with pivots and supports on



their back edges next each other, in like manner to their opposite edges, and the space between the tops of their backs and the ceiling or top of the car, may be increased to such an extent as to allow the grooves H, H', H<sup>2</sup>, H<sup>3</sup>, to be formed in the portion of them situated between these two points.

I am aware that chairs have been constructed with hinged seats and backs, for the purpose of enabling them to be folded together, to occupy less space when not being used, and therefore do not lay claim to the particular device for accomplishing this object, but

What I do claim as new and desire to secure by Letters Patent, is,

1. Extending the backs A, of the seats nearly to the floor of the car, and suspending said backs on pivots or centers a short distance above their lower ends, and providing the seat portions C, with pins C', near their vibrating edges which enter and rest in corresponding mortises formed in the sides of the car and partitions forming

the ends of the seats, substantially as described.

2. I also claim the peculiar method of connecting the berth platforms E, F, together, and raising them out of the way to the roof of the car, as represented in Figs. 1 and 2, when not desired to be used, and lowering them to form berths as represented in Figs. 3 and 4, by means of the segmental grooves H, H', H<sup>2</sup>, H<sup>3</sup>, formed in or secured to the transverse partitions D, and round and oblong pins or studs G, G', on the ends of the platforms E, F, which traverse in them, the said grooves being so formed, and in such relation to each other, as to enable the berth platforms to be rolled upward, connected, and tilted, and suspended near the roof of the car, and detached and lowered as occasion may require, substantially in the manner and for the purpose herein set forth.

SIDNEY C. CASE.

Witnesses:

R. N. RICE,  
C. H. HURD.