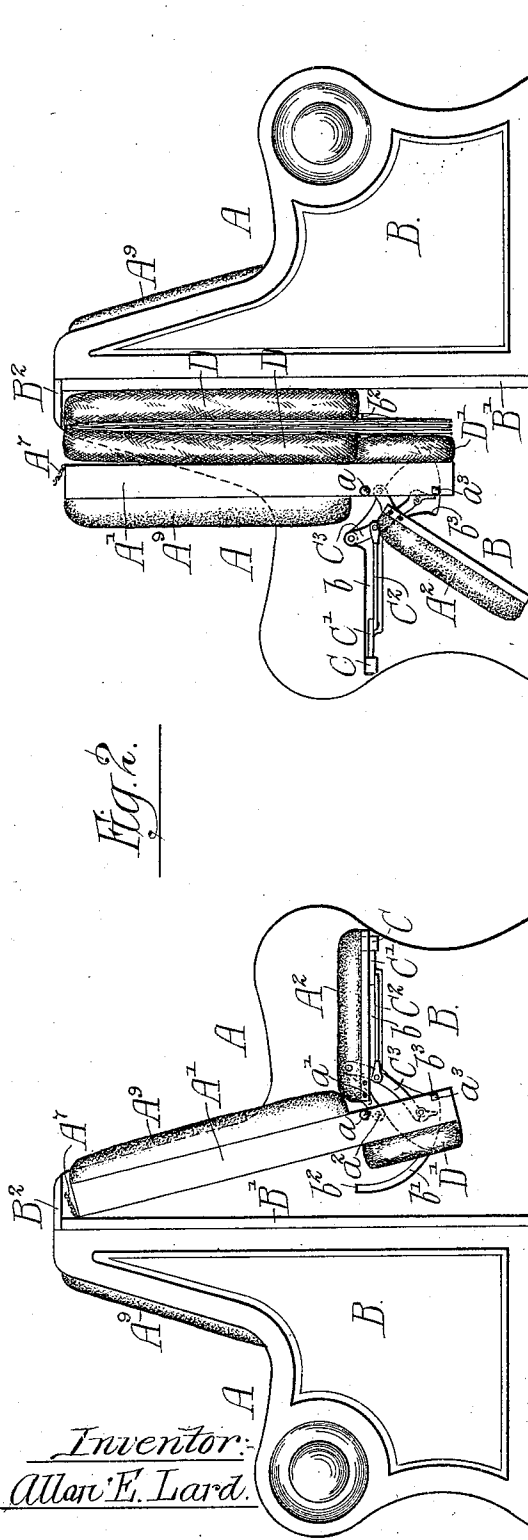
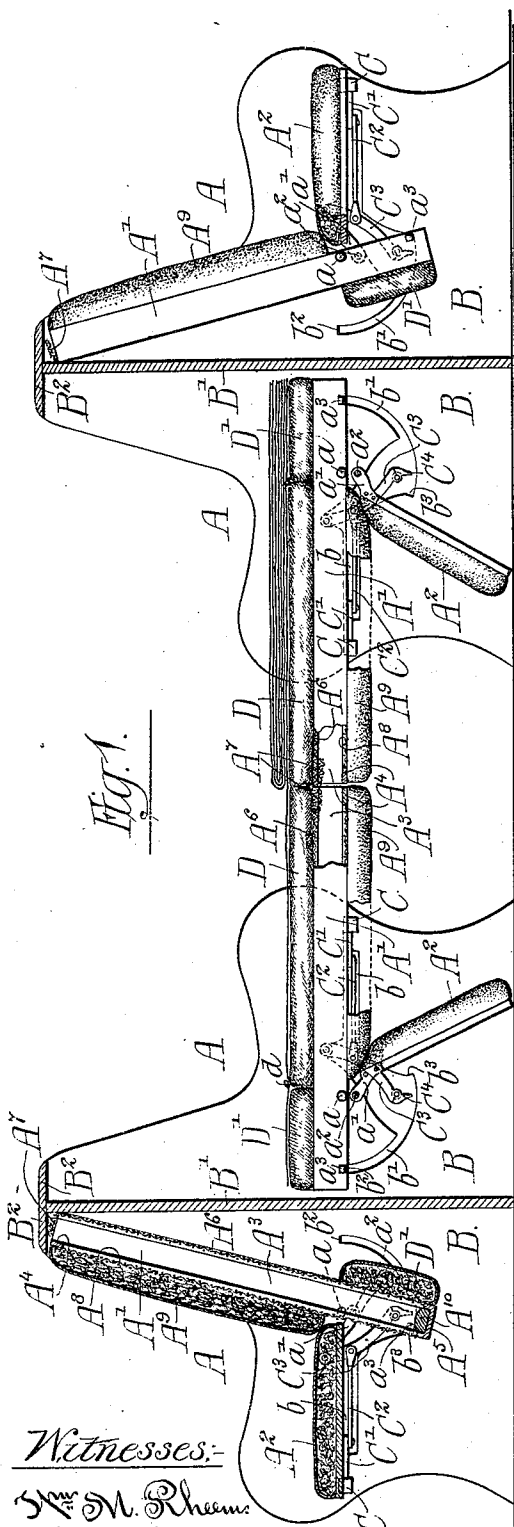


A. E. LARD.
SLEEPING CAR BERTH.

No. 511,533.

Patented Dec. 26, 1893.



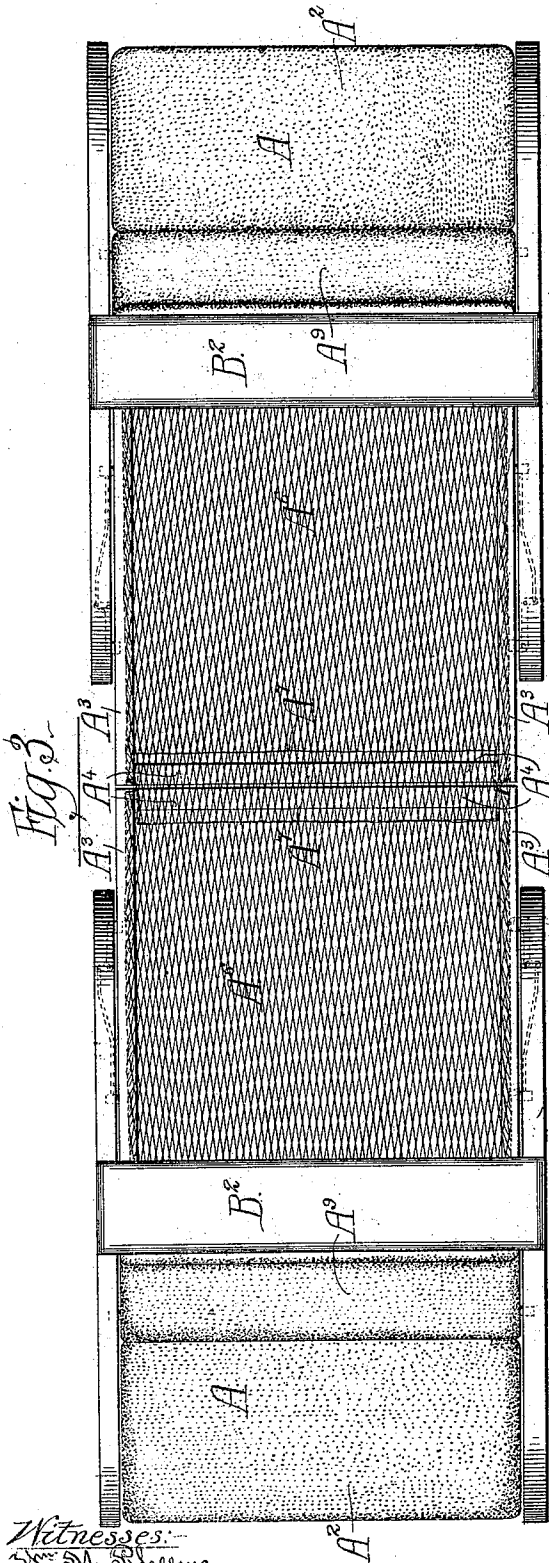
(No Model.)

2 Sheets—Sheet 2.

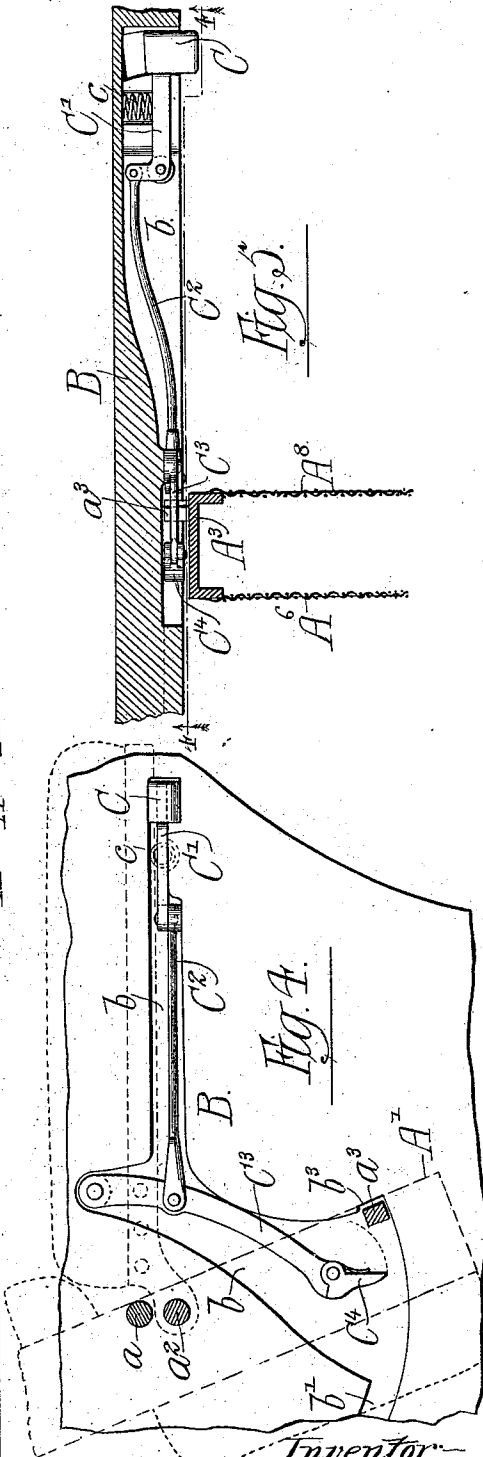
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Witnesses:
J. M. Brown
Henry H. Carter



By

Wayton Poole & Brown

Inventor:
Allan F. Lard

His Attys.

UNITED STATES PATENT OFFICE.

ALLAN E. LARD, OF CHICAGO, ILLINOIS.

SLEEPING-CAR BERTH.

SPECIFICATION forming part of Letters Patent No. 511,533, dated December 26, 1893.

Application filed March 28, 1893. Serial No. 467,970. (No model.)

To all whom it may concern:

Be it known that I, ALLAN E. LARD, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sleeping-Car Berths; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in sleeping car berths of that class in which two oppositely facing adjacent seats, are adapted to be converted into a bed or couch, forming what is commonly known as a "lower berth."

The object of the invention is to provide an improved construction in improved car berths of the character referred to, and it consists in the matters hereinafter described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a sectional elevation of a group of car seats embodying my invention, the two middle seats being arranged to form a bed. Fig. 2 is a side elevation of the two middle seats folded up to make room for dressing, the side panels of said middle seats being removed to afford a better view of the structure. Fig. 3 is a plan view of Fig. 1, the mattress being removed. Figs. 4 and 5 are details of the spring catch for supporting the seat proper, and the mechanism for releasing said catch.

In the drawings, A A designate several car seats constructed in accordance with my invention; each two oppositely facing adjacent seats being designed to be converted at will into a bed or couch. Said seats each comprise a pivotally supported back A' adapted to fold down and co-operate with the back of the opposite seat to form the bed bottom, and a seat bottom A², also pivotally supported and adapted to swing down out of the way when the back A' is dropped. As herein shown said back A' consists of a rectangular frame work provided near its lower end with laterally projecting pivots *a* engaging suitable bearing apertures in the side panels B of the seat. Said bearing apertures are located a considerable distance in front of the rear wall B' of the seat, leaving a space be-

tween the said rear wall and the back A' (when in a vertical position) somewhat wider than twice the thickness of the mattress designed to be used on the bed. See Fig. 2. The length of that portion of the seat backs A' above the pivots *a* is such that when dropped down the backs of the two seats comprising each berth abut each other and form a continuous bed bottom. The distance between the pivots and the rear wall B' is in this instance bridged over by extending the frame of the back A' an equal distance below said pivots, such lower portion swinging up to fill the space when the upper portion of the back is dropped, and in such case it will be obvious that the length of the back A' will be approximately equal to one half the distance between the rear walls B' of the two seats.

As hereinbefore stated the seat bottoms A² are adapted to swing down out of the way when the backs A' are dropped and to this end each of said seat bottoms is herein shown as provided with the rearwardly and downwardly projecting brackets *a'* pivotally secured by pivots *a*² to the side panels B of the seat, said pivots *a*² being herein shown as located adjacent to and below the pivots *a* of the back A'. Each of said seat bottoms is supported in front by spring detents C adapted to be retracted to permit the bottom to swing down. In this instance the retraction of said detents is accomplished automatically by the movement of the back A'; each of said detents being to this end made integral with, or otherwise connected with, one end of a bell crank lever C' which is pivoted to swing in a horizontal plane within a convenient recess *b* in the adjacent side panel B. The other end of said bell crank lever is connected by a link C² to a tripping lever C³ pivoted to the panel B at a point adjacent to the pivots *a'* and extending downwardly in the path of an inwardly projecting pin or lug *a*³ provided on the lower portion of the back A'. The extreme end of the lever C³ stands nominally just behind the said pin *a*³ so that when the back A' is dropped said pin will force said lever C³ rearward and thereby retract the detent C'. The extreme end C⁴ of the lever C³, is pivoted to the body of the lever in such

manner that it will yield freely when struck by the pin a^3 on its return movement and permit said pin to pass, but will not yield in the opposite direction. A suitable spring c placed behind the lever C' serves to nominally maintain the detent in its protracted position. As herein shown all parts of the detent mechanism thus described are located within said recess b which is made of suitable shape to receive said parts, and has an arc shaped extension b' within which the pin a^3 travels, the ends b^2 and b^3 of the extension b' serving as stops to limit the movement of the back A' .

As herein shown the rectangular frame of the back A' is formed of side bars A^3 and upper and lower cross-bars, A^4 and A^5 , respectively, forming a frame of considerable width, within or upon which any suitable form of bed spring may be used. That shown in this instance consists of a sheet of woven wire A^6 stretched across the rear face of the frame and attached at its edges to the side bars A^3 and lower cross bar A^5 .

To avoid an unyielding bar across the middle of the bed the upper cross-bar A^4 is made of less width than the other bars of the frame and is attached to the front face thereof, leaving the woven wire A^6 unsupported and free to yield at its upper edge. As a further improvement, said upper edge of the woven wire A^6 is provided with a short flap A^7 made either integral therewith or in a separate piece suitably jointed thereto, said flap being adapted to lap over the woven wire fabric of the opposite seat back and form a more continuous surface. A horizontal ledge B^2 , attached to the rear wall B' of the seat, bends down and conceals the flap A^7 when the back A' is raised. The front face of the frame is also herein shown provided with a sheet A^8 of woven wire which serves to support the usual upholstered cushion A^9 of the seat back.

In order to facilitate the moving or lifting of the seat back or frame, I preferably provide a counter balance weight A^{10} which is secured to the lower part of said seat back below the pivots thereof, in the manner shown.

Any suitable mattress capable of being readily folded may be used upon the bed bottom formed by the dropping of the seat backs A' . That shown in this instance consists of two flexibly connected sections D adapted to be removed and stored in the upper berth in the usual manner, the connection between the mattress sections being located in the same plane with the upper surface thereof, so that the parts of the mattress may be folded together flat or without being bent, in the manner shown. As a further improvement said mattress is herein shown as made of less length than the bed bottom leaving spaces at each end of which are occupied by separate mattress sections D' permanently attached to the lower ends of the rear faces of the seat backs A' .

The construction of my improved car seats

being as described their operation when used as seats will be obvious. When it is designed to convert them into a bed the backs A' , first of one and then the other, are swung down, each by its movement releasing the detents C and permitting the seat bottom to drop out of the way. The mattress sections D are then placed in position and the bed made up in the usual manner, ready for occupancy. One section D of the mattress together with that portion of the bed clothing above the same is then turned down upon the other section, and the seat backs A' raised bringing the parts into the position shown in Fig. 2, leaving a conveniently large space for undressing in; the bedding being prevented from slipping down by the permanently secured mattress section D' . When ready the occupant steps into the aisle (protected by the berth curtains) swings down the seat backs A' , turns back the mattress and bed clothing and gets in. In arising the operation is simply reversed. The occupant steps into the aisle, turns back the mattress and bed clothing raises the seat backs again to the position shown in Fig. 2, and dresses in the space thus provided.

To facilitate the manipulation of the bed clothing the mattress sections D may be provided near their outer ends with two or more buttons d and the lower sheet may have at one or both ends button holes for engaging said buttons. In this case the sheet will be buttoned to the mattress section which is at the head of the bed, and that mattress section to which said sheet is buttoned, will be the one which is turned back. As a consequence when the seat backs A' are again dropped and the said section D returned to place it will bring with it the lower sheet, leaving the other bed clothing turned back, as shown in Fig. 1, ready for occupancy.

From the foregoing description it will be noted that the central idea of my invention consists in so constructing the seat backs of a lower berth, that after being dropped to form the bed bottom, and after having the bedding placed thereon, they may be conveniently folded up without materially disarranging the bedding, to provide space for the occupant to undress or dress in.

While I consider the specific form illustrated as the best mode I have yet contemplated of applying my invention, it is obvious that numerous minor changes might be made without departing from the spirit of my invention. Thus it is obvious that the seat bottom A^2 might be rigidly attached to the back A' and if too long to swing clear of the floor, the latter might be recessed to receive it. Obviously also the seat back A' might be terminated at the pivots a and that portion now extending below said pivots formed in a separate piece and attached to the rear wall B' , or otherwise. So also the separate mattress sections D' might be dispensed with, and the sections D made long enough to extend from

and to the end of the berth. All such and similar modifications, however, I consider within the scope of my invention.

I claim as my invention—

5 1. A sleeping car berth comprising two seats provided with backs pivoted near their lower ends and adapted to swing down to form a bed bottom, and seat bottoms pivotally supported independently of the backs and adapted to drop out of the way of the backs to permit the lowering of the latter, substantially as described.

2. A sleeping car berth comprising two seats provided with backs pivoted near their lower ends and adapted to swing down and co-operate to form a bed bottom, and seat bottoms pivotally supported near their rear edges independently of the backs and adapted to drop out of the way to permit the lowering of the backs, substantially as described.

3. A sleeping car berth comprising two seats provided with backs pivoted near their lower ends and adapted to swing down to co-operate to form a bed bottom, seat bottoms adapted to drop out of the way of the backs, and mechanism operated by the backs for releasing the seat bottoms when the backs are lowered, substantially as described.

4. A sleeping car berth comprising two seats provided with backs pivoted near their lower ends and adapted to swing down and co-operate to form a bed bottom, seat bottoms pivotally supported and adapted to drop out of the way of the backs and mechanism operated by the backs for releasing the seat bottoms when the latter are dropped, substantially as described.

5. A sleeping car berth comprising two seats provided with backs pivoted near their lower ends at a distance from the rear walls of the seats and adapted to swing down and co-operate to form a bed bottom, seat bottoms pivotally supported near their rear edges independently of the backs and adapted to drop out of the way of the backs to permit the lowering of the latter, and movable detents normally engaging the seats to hold them in their elevated position, substantially as described.

6. A sleeping car berth comprising two seats provided with backs pivoted near their lower ends at a distance from the rear walls of the seats and adapted to swing down and co-operate to form a bed bottom, pivotally supported seat bottoms adapted to drop out of the way of the backs, detents normally engaging the seat bottoms to maintain them in a raised position, and mechanism operated by the backs for retracting the detents when the backs are lowered, substantially as described.

7. A sleeping car berth comprising two seats provided with backs pivoted near their lower ends and adapted to swing down and co-operate to form a bed bottom, each of said backs being composed of a frame work having a woven wire fabric attached to the rear face

thereof, said fabric being unsupported at its upper edge, substantially as described.

8. A sleeping car berth comprising two seats provided with backs pivoted near their lower ends and adapted to swing down and co-operate to form a bed bottom, each of said backs being composed of a frame work having a sheet of woven wire fabric attached to the rear face thereof, said sheet being unsupported at its upper edge and being provided along said upper edge with a projecting flap adapted to overlap the back of the other seat, substantially as described.

9. A sleeping car berth comprising two seats provided with backs pivoted between their upper and lower ends at a distance from the rear walls of the seats and adapted to swing down and co-operate to form a bed bottom, the rear faces of the backs below the pivots being provided with permanently attached mattress sections, substantially as described.

10. A sleeping car berth comprising two seats provided with backs pivotally supported between their upper and lower ends at a distance from the rear wall of the seats and adapted to fold down to co-operate to form a bed bottom, each of said backs being composed of a rectangular frame provided on its rear face with a yielding elastic surface, substantially as described.

11. A sleeping car berth comprising two seats provided with backs pivoted near their lower ends at a distance from the rear walls of the seats, and adapted to fold down and co-operate to form a bed bottom, and a mattress comprising two flexibly connected sections, whereby one mattress section may be folded upon another, and both supported behind the adjacent seat back when the latter is lifted, substantially as described.

12. A sleeping car berth comprising two seats provided with backs pivoted between their upper and lower ends at a distance from the rear walls of the seats and adapted to fold down to co-operate to form a bed bottom, mattress sections permanently attached to the lower portions of the rear face of the backs, and a mattress comprising two flexibly connected sections adapted to fit between the permanently attached sections, whereby one of the flexibly attached sections may be folded upon the other and both supported behind the adjacent seat back when the latter is raised, substantially as described.

13. A sleeping car berth comprising two seats provided with backs pivoted near their lower ends at a distance from the rear walls of the seats and adapted to fold down and co-operate to form a bed bottom, and a mattress comprising two flexibly connected sections, whereby one mattress section may be folded upon the other and both supported behind the adjacent seat back when the latter is lifted, and means for detachably connecting the head end of the lower sheet to the adjacent mattress section, substantially as described.

14. A sleeping car berth comprising two
seats provided with backs pivoted near their
lower ends and adapted to swing down and
co-operate to form a bed bottom, and weights
5 applied to counterbalance said backs, sub-
stantially as described.

In testimony that I claim the foregoing as

my invention I affix my signature in pres-
ence of two witnesses.

ALLAN E. LARD.

Witnesses:

C. CLARENCE POOLE,
HENRY W. CARTER.