

No. 735,810.

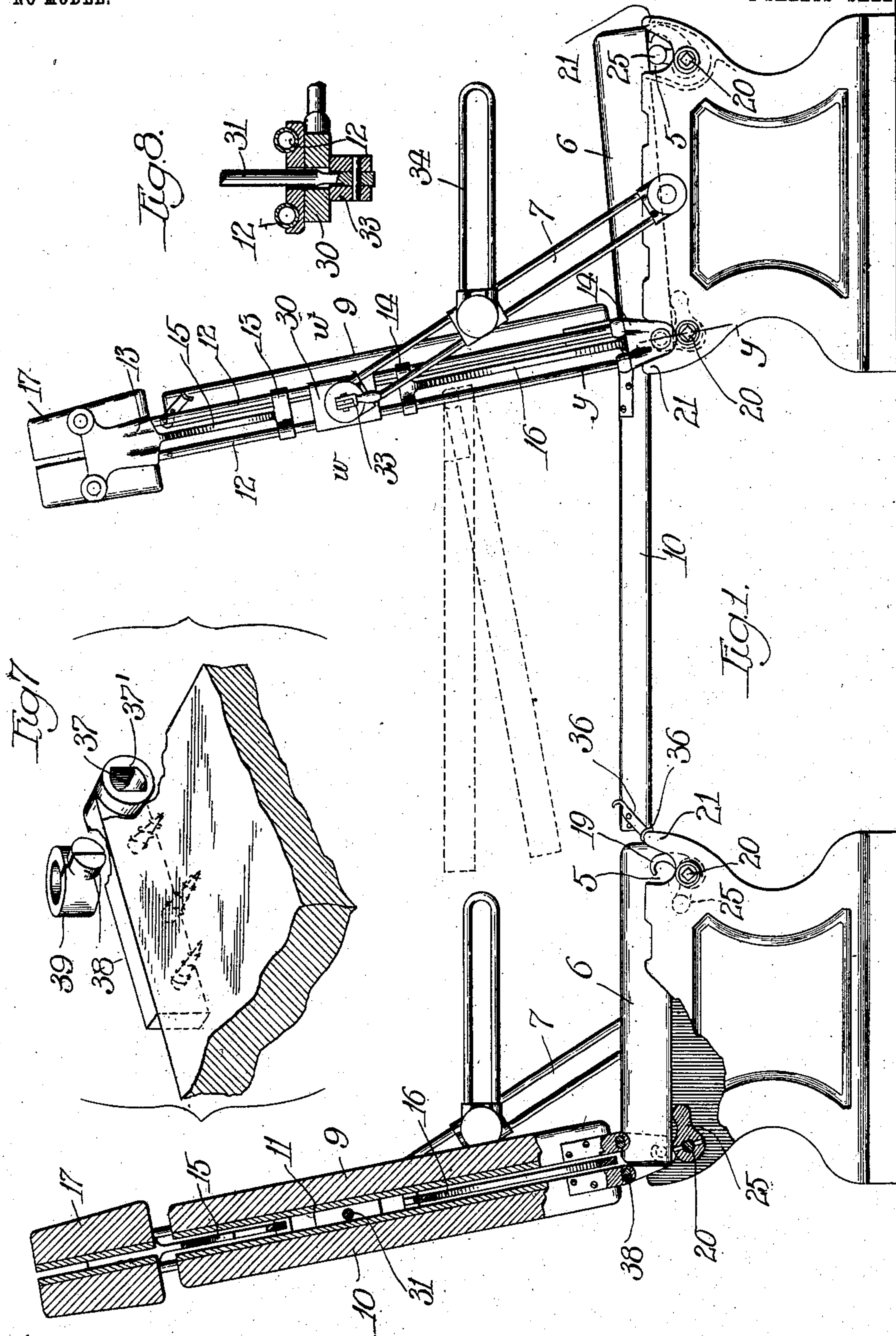
PATENTED AUG. 11, 1903.

L. PETTERSON.
CONVERTIBLE RAILWAY COACH CHAIR.

APPLICATION FILED JUNE 3, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses;
Edw. Barrett
Wm. H. Lewis

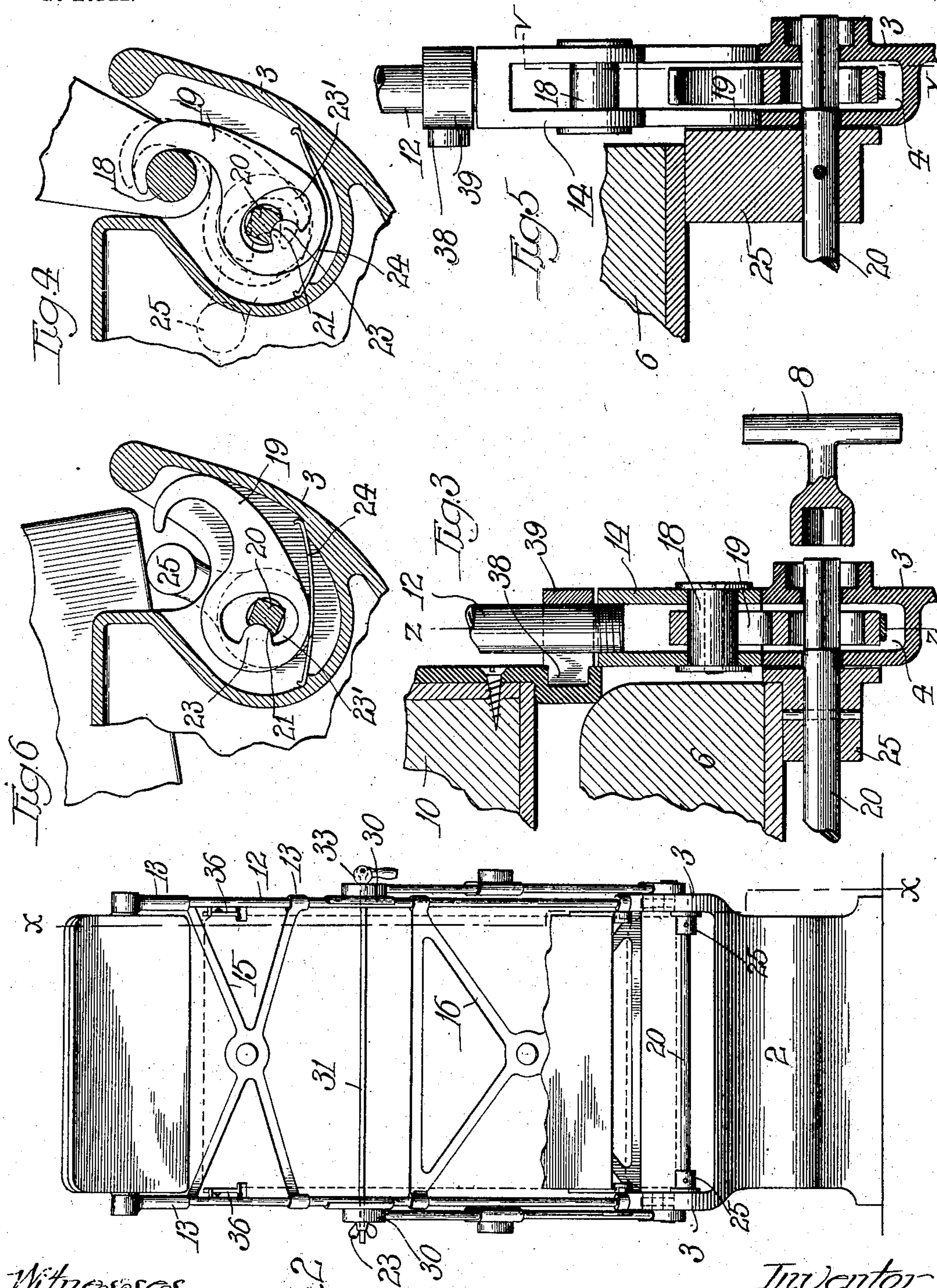
Inventor
Ludwig Pettersson
By, *C. Mawley*, Atty.

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Witnesses
 Edw. Barrett.
 Wm. H. Gause

Fig. 2

Inventor
 Ludwig Pettersson
 By
 C. Hawley, Atty.

UNITED STATES PATENT OFFICE.

LUDWIG PETTERSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO CHARLES W. ADAMS, OF CHICAGO, ILLINOIS.

CONVERTIBLE RAILWAY-COACH CHAIR.

SPECIFICATION forming part of Letters Patent No. 735,810, dated August 11, 1903.

Application filed June 3, 1903. Serial No. 159,929. (No model.)

To all whom it may concern:

Be it known that I, LUDWIG PETTERSON, a citizen of the Kingdom of Norway, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new, useful, and Improved Convertible Railway-Coach Chair, of which the following is a specification.

This invention relates to convertible and reversible chairs, and has special reference to railway-coach chairs of that class in which the chair-back is adjustable to upright, reclining, and horizontal positions and in which the chair-back when standing upright may be moved back or forth to face the seat in either direction.

The object of my invention is to provide coach-chairs which may be converted into berths and which shall possess numerous auxiliary features that shall afford comfort and convenience to the occupants.

A special object of this invention is to provide a convertible chair with means for simultaneously locking the back of the chair to the chair-base and lowering the back or rear side of the chair-seat.

Another such object is to provide a railway-coach chair wherein a part of the chair-back may be made to serve as a table or desk or a foot-rest for a passenger sitting in an adjacent chair.

Another object of my invention is to provide a convertible chair having a back which is locked to the chair-base, but which may be reclined to suit the occupant.

My invention consists generally in a convertible and reversible chair for railway-coaches, which comprises a suitable base, a chair-back, the end posts of which rest in said base, suitable means for supporting the back at a comfortable angle, a chair-seat, and means in said base beneath the opposite sides of the seat for securing said back to said base and for manipulating the chair-seat to either level or to incline the same; and, further, my invention consists in a convertible reversible chair having end links for supporting the back and which are adjustably connected thereto for securing the back at different angles; and, further, my novel coach-chair is characterized by a two-part or sectional back

wherein one or both sections may be adjusted and utilized as a desk or table or as an extension of the seat of a neighboring chair; and, further, my invention consists in various details of construction and combinations of parts, all as hereinafter described, and particularly pointed out in the claims.

The invention will be more readily understood by reference to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is an end view of two convertible reversible chairs embodying my invention, one thereof being shown in section on the irregular section-line xx of Fig. 2. Fig. 2 is a rear elevation of the chair, a portion of the back-cushion being broken away to show the frame of the chair-back. Fig. 3 is an enlarged transverse vertical section on the irregular section-line yy of Fig. 1, showing the mechanism for simultaneously locking the chair-back and lowering the chair-seat. Fig. 4 is a sectional detail on the line zz of Fig. 3. Fig. 5 is a view similar to Fig. 3, showing the back-post as it appears when being lifted from the base and showing the seat elevated. Fig. 6 is a sectional view on the line vv of Fig. 5, the back-post being entirely removed. Fig. 7 is a perspective detail illustrating the attachment between the back-post and one of the chair-back sections or cushions, and Fig. 8 is a sectional detail on the line ww of Fig. 1.

The base of the chair may be of any suitable form or design; but as it is usually employed to contain the berth-furnishings it is preferably a box-like structure 2, having raised flanges 3 at its ends. In these flanges at the corners of the base I provide the pockets 4, and the ends of the base are provided with the recesses or notches 5. The pockets 4 accommodate locking devices for securing the chair-back at either side of the base, while the notches 5 are adapted to receive and retain the lower ends of the back-posts.

6 is the chair-seat, which rests upon the seat-manipulating devices, two of which are provided one at each side of the base. The manipulating devices are preferably independent of each other, but constitute parts of the locking mechanisms, as explained hereinafter.

The chair-back is a rigid frame made up of end posts and suitable cross-ties. To this frame I attach front and back cushions and preferably a top cushion, which completes the chair-back. The lower ends of the back-posts rest in the recesses or sockets of the base, and the back is held in position by the links 7, attached thereto and to the base. Each set of locking and seat-manipulating devices is operable by a key 8, upon turning which the chair-back may be either fastened to the base or disengaged therefrom and simultaneously the chair-seat either dropped down or lifted, so that it may always slope toward the back of the chair. The ends of the back-posts fit loosely in the recesses 5, and I provide a sliding connection between the chair-back and the upper ends of the supporting-links, whereby the chair-back is adapted for adjustment to any position found comfortable by the occupant. In a reversible chair it is necessary to cushion both the front and back of the chair-back, and I preferably make the front and back in separate sections 9 and 10, each of which has its base or finishing board 11. I attach these sections to the back-frame by pivotal joints at the lower edges of the sections, so that either section may be folded or dropped down, as illustrated in Fig. 1. Furthermore, I employ pivotal attachments which permit the vertical adjustment of the back-section, so that it may be either dropped into the position shown by full lines in Fig. 1 or may be elevated, as shown by dotted lines in said figure, to serve as a desk or dining-table.

The general features and the operation of my chair being now understood, its construction in detail will be made clear by further reference to the drawings. It will further be noted that each end post of the chair-back comprises two rods 12 12, that are secured in the bifurcated ends 13 13 and 14 14 of the metal cross-ties or frames 15 and 16. The upper ends 13 of the frame 15 are formed to hold the top cushion or head-rest 17 of the chair-back. The lower ends 14 of the frame 16 are preferably integral therewith and form the lower ends of the back-posts. These ends are pointed or wedge-shaped and are rounded to enter the recesses 5 in the chair-base, as illustrated in Figs. 1, 2, 3, and 4. The lower end of each post may be bifurcated or forked, as shown in Figs. 3 and 5, and each is provided with a pin 18 to be engaged by the locking device in the base. This locking device comprises a hook 19, placed in the socket 4 and arranged upon the operating-shaft 20, by which the hook may be turned in the socket and also worked vertically therein. Two of these hooks are provided on each of the two shafts 20 in the base for locking both posts of the back thereto. The ends of the shafts 20 are square, and in one face of each end thereof I provide a cam-groove 21. This is in engagement with the cam-lug 23, which extends into the cam-open-

ing 23' in the shank of the hook. This cam-opening is of sufficient width to permit the oscillation of the lower end of the hook about the end of the shaft, and the cam-lug is held in engagement with the shaft by a flat spring 24, placed in the bottom of the socket 4. The shaft, as before explained, is adapted to be turned by the key 8, which fits its square end, and when turned in one direction the lower end of the hook will be elevated, thereby lifting the hook proper from the pin 18 of the back-post and permitting the hook to fall, as shown in Fig. 6. The engagement of the grooved shaft with the cam-lug of the hook constitutes a crank connection between said parts for elevating or depressing the hook, while at the same time it permits the hook to turn about the shaft, as required to engage the hook with the pin of the back-post. Thus when the shaft is turned in the opposite direction the first effect is to lift the free end of the hook and pass it over the pin 18 in the back-post. The further movement of the shaft operates to depress the lower end of the hook, as shown in Fig. 4, and thereby draw the hook proper firmly upon the pin 18. Attached to each shaft 20 are two arms 25. There are therefore four of these arms. The seat 6 rests upon them. The relation of the arms 25 to the grooves 21 in their shaft is such that when the shaft is turned to raise the hooks the arms 25 upon said shaft will be lowered to permit the seat to fall. On the other hand, when the shaft is turned to loosen the hook the arms will be raised and the seat lifted. The normal position of the seat is therefore that which is shown in the forward chair of Fig. 1—namely, elevated at the front and depressed at the back, so that the seat slopes toward the back of the chair. Thus whenever the posts of the chair-back are unlocked and removed from the sockets on one side the seat will be elevated on that side, while when the seat-posts have been dropped into the sockets on the opposite side of the seat the locking of the posts will bring about the dropping or depressing of the seat on the corresponding side of the chair. The arms 25 when raised pass the center, and the weight of and upon the seat, resting upon the arms, prevents the accidental loosening of the locks. When desired, the seat may be leveled by turning down the arms in the front of the base, as shown in the rear chair of Fig. 1. This is done when the berth is to be made up. The round ends of the posts resting in the sockets, together with the pins 18 and hooks 19, constitute a pivotal connection between the base and the chair-back, and while the back is firmly attached to the base it is free to be adjusted in any angle found desirable. The chair-back is rendered adjustable by the employment of the slides 30, which engage the end posts of the back, as shown in Figs. 1, 2, and 3. These slides are connected by the rod 31. On one end of the rod is a tension-adjusting nut 32, and on the other end is a small cam 33.

The rod extends through the upper ends of the links 7, and when the cam is turned down, as shown in Fig. 2, the links, the slides, and the posts are firmly bound together to secure the back at any angle to which it has been adjusted. The ends 13 and 14 of the cross-frames 15 and 16 serve as stops for the slides 30, and the slide may therefore serve to support the back when the cam is loosened or when the chair-back is being moved from one side of the chair to the other. The arms 34 are pivoted on the links 7, and suitable stops are provided thereon, so that the arms may be swung from one side to the other to serve in either position of the back. The chair-back is provided with the two sections or cushions 9 and 10, as before explained. These are secured at their upper ends by small hooks 36 and at their lower ends are provided with side sockets 37, that are pivoted on the lugs 38 of the split rings 39. Each lug is split through, and the socket 37 is oval-shaped or is provided with cam-surfaces 37'. When the section or cushion is in its normal position upon the chair-back, the split ring is not compressed; but when the section is dropped down the sockets turn upon the split rings and draw the lugs together and clamp the rings upon the chair-posts. Thus the lower edge of the section may be raised, as shown by dotted lines in Fig. 1, and then clamped in such position by merely permitting the section to fall to a horizontal position. In this position its free edge may rest upon the knees of the passenger sitting in the chair behind, the back board 11 of the cushion at such time serving as a desk or table for such passenger. If the section is not lifted, but is simply detached at the top and permitted to fall, its free end will drop into the plane of the adjacent seat and will be supported in this position by the engagement of the forked ends 36' of the small hooks with the corners or fingers 2' on the base of the rear chair.

I have used the term "simultaneous" herein as best defining the successive operations of the locking and seat-tilting devices by which the chair back and seat are locked and depressed, or vice versa, at the same moment. The seat preferably extends beneath the lower edge of the cushioned back, and the tilting arms may with propriety be spoken of as also simultaneously raising or lowering the chair-back when a locking-shaft is operated.

It is obvious that numerous modifications of my invention will readily suggest themselves to one skilled in the art, and I therefore do not confine the invention to the specific construction herein described.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a convertible chair, the combination of a base, with a seat, a back, and means upon said base operable to simultaneously lock said

back thereto and incline the seat, substantially as described.

2. In a convertible chair the combination of the base with the seat, the back, a mechanism operable in said base locking said back, and means for inclining said back, substantially as described.

3. In a convertible chair the combination of the base with a back adjustable at various angles with respect to said base, means adjustably supporting the back, locking devices provided in said base for securing the back in either position thereon, and means for operating two locking devices simultaneously, substantially as described.

4. In a convertible chair the combination of the base with a back adjustable at various angles with respect to said base, means adjustably supporting the back, revoluble locking devices provided in said base for securing said back in either position thereon, and revoluble means for operating two locking devices simultaneously, substantially as described.

5. In a convertible chair the combination of the base with the back, the back-supporting links, adjustably connected with said back and pivoted on said base, said base having sockets for the reception of the lower extremities of said back, and means in said base for pivotally and detachably locking said extremities in said sockets, substantially as described.

6. In a convertible chair the combination of a base with the back, a seat, adjustable links supporting said back, means in said base pivotally locking said back thereon and said base also containing means operable to incline the seat as and when the back is locked thereon, substantially as described.

7. In a convertible chair a base in combination with a back, provided with end stops, the links pivoted on said base and having their upper ends adjustably attached to said back between said stops, and means in said base detachably locking said back thereto, substantially as described.

8. In a convertible chair, the combination of a base with a back, a seat, means for simultaneously securing the back and lowering one side of the seat, and means for inclining the back to a predetermined degree, after it is secured; substantially as described.

9. In a convertible chair, the combination of a base with a back supported by said base, and one or more braces pivotally secured to said base at one end and provided with back-locking mechanism at the other end, substantially as described.

10. In a convertible chair, the combination of a base with a back, a seat, means for simultaneously securing the back and lowering the adjacent side of the seat, and means for inclining the back and securing the same in several different positions, substantially as described.

11. In a convertible chair, the combination of a base with a seat, a back having end posts, one or more braces pivotally secured to the base and slidably connected to said posts, and
5 locking mechanism carried by said braces, substantially as described.

12. In a convertible chair, the combination of a base, with a back provided with a movable section, and means for securing said section in a horizontal plane at any predetermined distance from said base, substantially as described.

13. In a convertible chair, a back provided with a movable section slidably and pivotally
15 mounted thereon, substantially as described.

14. In a convertible chair, the combination of a back having a movable section, with means for locking one end of said section at various elevations on said back, substantially
20 as described.

15. In a convertible chair, the combination of a base with a seat, a back, means for securing said back at either side of the base and simultaneously lowering the end of the seat
25 adjacent to the back, and means for raising the opposite end of the seat, substantially as described.

16. In a convertible chair, the combination of a base with a seat, a back, and means located at each side of the base whereby the back may be secured and the seat simultaneously inclined, substantially as described.

17. In a convertible chair, the combination of a base with a back, a seat, shafts pivotally
35 supported by said base, and means actuated by said shafts for altering the plane of said seat and for locking the back in a predetermined position, substantially as described.

18. In a convertible chair, the combination of a back with locking mechanism therefor comprising a slotted shaft, hooks loosely mounted thereon and provided with projections fitting the slots, and springs bearing against the hooks, substantially as described.

19. In a convertible chair, the combination of a back having a movable section, back-posts, split rings loosely mounted on said posts and provided with lugs, and means for compressing said rings, actuated by the movable section, substantially as described.
50

20. In a convertible chair, the combination of a back provided with a movable section, with means actuated by the movement of said section for locking one end thereof at a desired point, substantially as described.
55

21. In a convertible chair, a reversible back having posts connected by braces and provided

with a pair of movable sections attached to said posts, as and for the purposes stated. 60

22. In a convertible chair, the combination of the base with the seat thereon, the back-sockets for the back thereof, upon opposite sides of said base, back-locking and seat-manipulating devices provided in said base, 65 the adjustable back-supports and the movable drop-cushion forming a part of said back, to serve as a table or rest, substantially as described.

23. In a convertible chair the base in combination with the reversible back provided with front and back cushions connected for service as tables, substantially as described. 70

24. In a convertible chair the base in combination with the reversible back provided with front and back cushions vertically movable and pivotally connected with said back and means for locking said cushions when lowered, substantially as described. 75

25. In a convertible chair the base in combination with the shafts therein, the arms on said shafts, the locking-hooks also thereon, the seat resting on said arms and by its weight securing the same, said shafts and hooks and the back secured by two of said hooks, substantially as described. 80

26. In a convertible chair the combination of a base with a back, a seat and a back-board hinged on said back for use as a table or rest, substantially as described. 85

27. In a convertible-chair-back lock the combination of the socket, the shaft therein and grooved as described, the spring, the hook resting on said spring and having a cam-lug engaged with the grooved shaft, for rotation and vertical movement thereby, substantially as described. 90

28. In a convertible chair, the combination of a base with a back, a seat, means for simultaneously locking the back at its lower end and lowering the adjacent side of the seat, and means for reclining the back to and securing the same in several different positions, after said lower end of the back is secured. 95

In testimony whereof I have hereunto set my hand, this 1st day of June, 1903, at Chicago, Illinois, in the presence of two witnesses. 105

LUDWIG PETTERSON.

Witnesses:

WM. H. CLARKE,

W. W. STYCHE.