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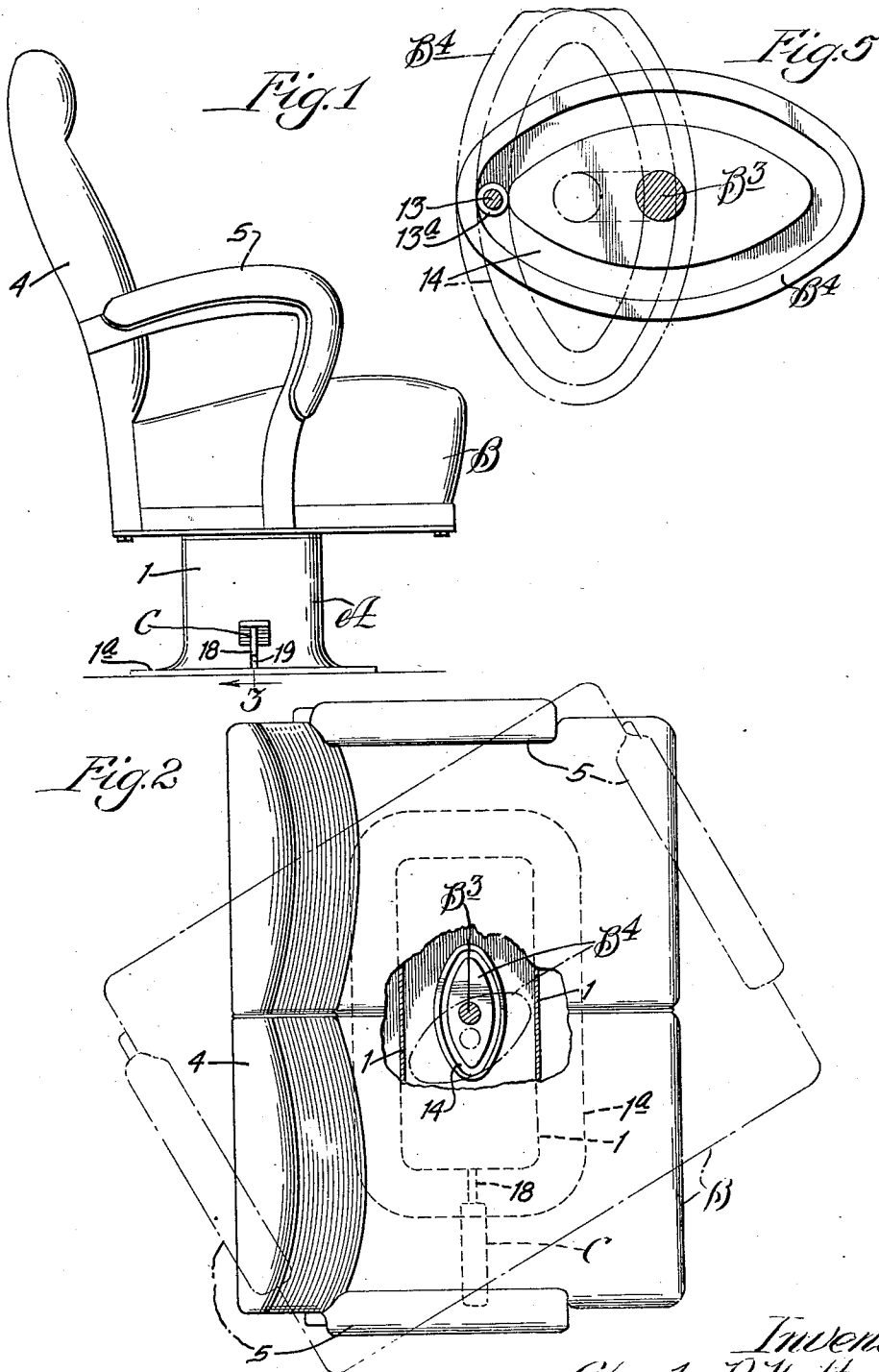
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1,803,063

REVERSIBLE SEAT OR CHAIR

Filed Dec. 14, 1928

2 Sheets-Sheet 1



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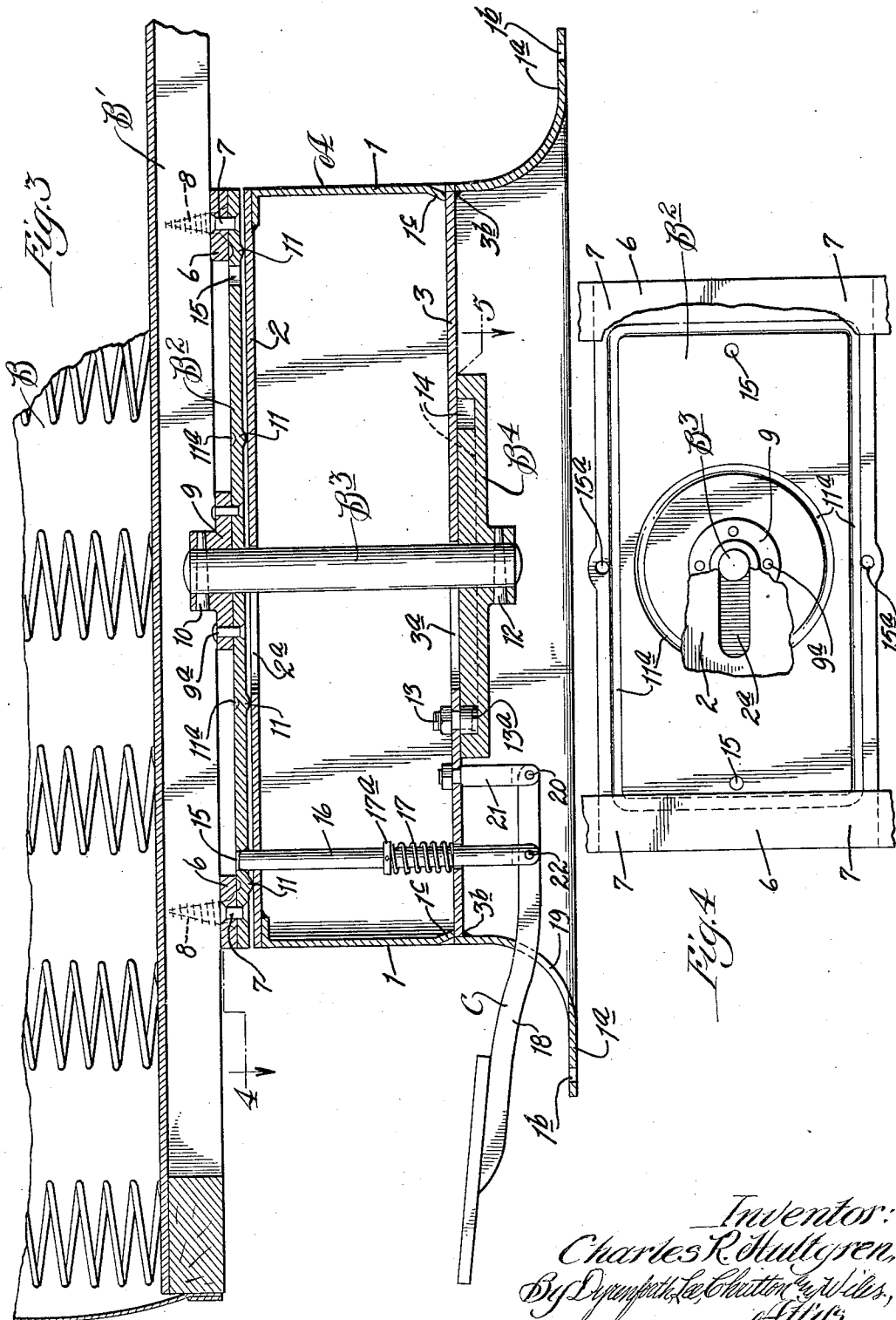
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REVERSIBLE SEAT OR CHAIR

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2 Sheets-Sheet 2



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REVERSIBLE SEAT OR CHAIR

Application filed December 14, 1928. Serial No. 326,123.

This invention relates particularly to a seat adapted for use in railway coaches, or the invention may be usefully employed elsewhere.

5 The primary object is to provide a seat adapted for use in railway coaches, for example, which can be reversed, and which, in the operation of reversing the seat, will be laterally shifted.

10 Such a construction and mode of operation enables a double seat fixed to the floor of a railway coach to be pivotally turned in effecting reversal and to be shifted to give the necessary clearance in turning.

15 The invention is illustrated in a preferred embodiment in the accompanying drawings, in which—

20 Fig. 1 is a side elevational view of a seat embodying the invention; Fig. 2, a broken plan view of the seat, the dotted lines indicating one position the seat may assume in turning; Fig. 3, a broken vertical sectional view on an enlarged scale taken as indicated at line 3 of Fig. 1; Fig. 4, a broken plan view of a plate and attaching bars with which the 25 bottom of the seat-structure is equipped, the view being taken as indicated at line 4 of Fig. 3 and Fig. 5, a plan sectional view taken as indicated at line 5 of Fig. 3.

30 In the preferred construction shown in the drawings, A designates a base which may be fixedly secured to a floor; B, a seat structure having a frame B' equipped at its lower side with a plate B², from which depends a rigidly 35 attached post B³ which is equipped at its lower end with a rigidly secured cam B⁴; and C, locking mechanism adapted to secure the seat in various positions, as desired.

40 The base A is shown as consisting of a box-like structure comprising a peripheral wall 1, a top plate 2, and an internal lower plate 3. The member 1 may be formed from heavy sheet metal by a suitable stamping operation 45 and is preferably provided with an enlarged

base portion 1^a having screw-receiving perforations 1^b.

The top plate 2 preferably is spot-welded to an intumed flange with which the member 1 is provided at its upper edge. The plate 3 is entered from the lower open end of the box and bears against lugs 1^c which are struck inwardly from the peripheral wall of the member 1. The plate 3 is spot-welded to the member 1, as indicated at 3^b.

55 The seat B forms a part of the super-structure of a chair, which is shown provided with a back 4 and arms 5. The seat illustrated is a double seat, suitable for the occupancy of two passengers. The section shown in Fig. 3 is parallel with the front of the seat, or coincident with the long axis of the seat.

60 The bottom frame B' of the seat has attached thereto cross-bars 6, and the ends of the plate B² are secured to said cross-bars by means of rivets 7. The bars are shown attached to the rails of the bottom frame B' by means of screws 8 (as shown in dotted lines).

65 The post, or heavy vertical stud, B³ has its upper end received in a socket 9 which is secured to the upper surface of the plate B² as by means of rivets 9^a. A key, or pin, 10 secures the upper end of the post to the socket. The plate B² preferably is provided at its lower side with ribs, or corrugations, 11 75 which bear upon the plate 2. These ribs are intended to reduce friction in the movement of the plate B² upon the plate 2. In Fig. 4, the grooves corresponding with the corrugations mentioned are designated 11^a.

80 The post B³ is capable of being turned with the super-structure of the chair and of being shifted from the central position shown in Fig. 3 to an eccentric position, and back. The post is guided in the shifting operation by slots 2^a and 3^a with which the plates 2 and 3 are provided, respectively.

85 The cam B⁴ is provided with a central perforation which receives the lower end of the 90

post, or shaft, B³. The cam is keyed to the lower end of the post by means of a pin 12.

The plate 3 is provided at some distance from the center of the base with a fixedly secured stud 13 equipped with a cam-roller 13^a which engages the groove 14 of the cam B⁴. The cam-roller serves to shift the came B⁴ and thus cause the shifting of the post B³, and through the medium thereof, of the super-structure of the chair when the chair is pivotally turned or revolved.

In the illustration given, the cam B⁴ is shown as of general elliptical shape, and the groove 14 is of general elliptical shape. This permits complete revolution of the super-structure of the chair upon the base A, and is the preferred construction.

The seat-carried plate B² is shown provided with perforations, or sockets, 15 and 15^a. The seat-locking mechanism C is shown as comprising a vertical locking-plunger 16 which extends through guide-perforations in the plates 2 and 3; a spring 17 confined between the plate 3 and a collar 17^a on the plunger 16 and serving to throw the plunger to the locking position; and a foot-treadle 18 which extends through a slot 19 in the base A and has its inner end connected, by a pivot 20, to a stud 21 which is fixedly secured to and depends from the plate 3. The lower end of the plunger 16 is connected with the foot-treadle by means of a pin 22. When the seat is in the position shown in Fig. 1, or when the seat is completely reversed from that position (at an angle of 180°), the plunger 16 enters one of the perforations 15. When the seat is turned to an angle of 90° from the position shown in full lines in the drawings, the plunger 16 engages one of the sockets 15^a.

It will be noted that the cam-plate B⁴ bears against the lower surface of the plate 3. The cam-plate therefore serves in holding the plate B² of the seat-frame closely against the top wall 2 of the base A, thus preventing tilting of the chair-structure.

In operating the device, the operator steps on the foot-pedal C. He then grasps the back of the chair and exerts a turning force upon the super-structure of the chair, thus causing the cam-equipped post B³ to turn. The cam-groove slides upon or follows the roller 13^a, thus causing the post B³ to shift in the slots 2^a and 3^a, thus giving a movement of translation to the super-structure of the chair. The turning operation may be halted when the chair is at right angles to the position shown in full lines of the drawings, such position corresponding with the dotted position of the cam B⁴, shown in Fig. 5; or the chair may be turned 180° to effect complete reversal, that is, to reverse the direction in which the chair fronts.

In practice, the chair may be swung in either direction in effecting reversal, which is an advantage.

The construction and mode of operation provide for the shifting of the chair while it is being turned. Thus, the chair is capable of moving away from the side wall of the car so as to have sufficient clearance to permit turning.

It may be added that the present invention permits grouping three double seats in a car, if desired. For example, two seats may be set to face each other, and an intervening seat may be set at right angles to the other two seats and facing the window.

A modification of the present invention which provides for oscillating the chair to an angle of 180° and then back is disclosed in my application Serial No. 324,933, filed December 10, 1928. In said modification, as well as in the present construction, provision is made for the turning or pivotal movement of the chair about a vertical axis, coupled with shifting. In the construction described in the present application, provision is made for complete revolution of the chair, coupled with a shifting action.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, but the appended claims should be construed as broadly as permissible, in view of the prior art.

What I regard as new, and desire to secure by Letters Patent, is:

1. A device of the character set forth, comprising: a base equipped with spaced guide-members; a chair-structure movably mounted on said base and having its seat-frame equipped with a depending post movable in said spaced guide-members; a cam-plate secured to the lower end of said post and bearing upwardly against the lower guide-member; and a cam-stud secured to the lower guide-member and co-acting with said cam-plate.

2. A device of the character set forth, comprising: a hollow base equipped with a top wall and a lower inner wall spaced therefrom, said walls being provided with guide-slots; a chair-structure mounted on said base and equipped with a rigidly secured post depending through said guide-slots a slotted cam-plate rigidly secured to the lower end of said guide-post and bearing against the lower side of said lower wall and a cam-stud mounted on said lower wall and engaging the slot of said cam-plate.

3. A device of the character specified in claim 2, characterized by means for locking the chair-structure to the base in either of two positions separated by 180°, or in an intermediate position at right angles thereto.

4. A device of the character set forth, comprising: a hollow base equipped with a top wall and a lower inner wall spaced therefrom, said walls being provided with guide-slots; a chair-structure mounted on said base

and equipped with a rigidly secured post depending through said guide-slots; a slotted cam-plate rigidly secured to the lower end of said guide-post and bearing against the lower side of said lower wall; a cam-stud mounted on said lower wall and engaging the slot of said cam plate, and means for locking the chair-structure against displacement relative to the base.

wall and engaging said cam for shifting said chair-structure relative to said base.

5. A device of the character set forth, comprising: a hollow base equipped with a top wall and a lower inner wall spaced therefrom; a chair-structure mounted on said base and equipped with rigidly secured posts extending through said walls; a slotted cam plate rigidly secured to the lower end of said guide-post and bearing against the lower side of said lower wall; a cam-stud on said lower wall and engaging the slot of said cam plate; and means for locking the chair-structure to the base in either of two positions separated by 180°, or in an intermediate position.

10. A structure of the character set forth, comprising a hollow base having a top wall and a lower inner wall, said walls being provided with guide-slots; a chair-structure mounted on said upper wall; a guide-post carried by said chair-structure; a cam secured to said post; means carried by said inner wall for engaging said cam for shifting said chair-structure relative to said base when said structure is reversed; and means carried by said inner wall for locking said chair-structure against displacement relative to said base.

CHARLES R. HULTGREN.

6. A device of the character set forth, comprising: a hollow base equipped with a top wall and a lower inner wall spaced therefrom, said walls being provided with guide-slots; a chair-structure mounted on said base and equipped with a rigidly secured post depending through said guide-slots; a slotted cam plate rigidly secured to the lower end of said guide-post and bearing against the lower side of said lower wall; a cam-stud mounted on said lower wall and engaging the slot of said cam plate; and mechanism carried by said lower wall for locking said bearing-structure against displacement relative to said base.

7. A structure of the character set forth, comprising: a hollow base having spaced walls; a chair-structure pivotally mounted on said base and having a bearing plate cooperating with one of said spaced walls; and means carried by the other of said spaced walls for locking said chair-structure against displacement relative to said base.

8. A structure of the character set forth; comprising: a hollow base having spaced walls; a chair-structure shiftably and pivotally mounted on said base and having a bearing plate cooperating with one of said spaced walls; means carried by the other of said spaced walls for locking said chair-structure against displacement relative to said base; and means for shifting said chair-structure relative to said base when said chair-structure is revolved.

9. A structure of the character set forth, comprising: a hollow base having a top wall and a lower inner wall; said walls being provided with guide-slots; a chair-structure mounted on said upper wall; a guide post carried by said chair-structure and projecting through said guide slots; a cam secured to said post; and means carried by said inner

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