Oct. 16, 1934. A. E. LEHMANN 1,977,485

CAR SEAT

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Fig. 1.

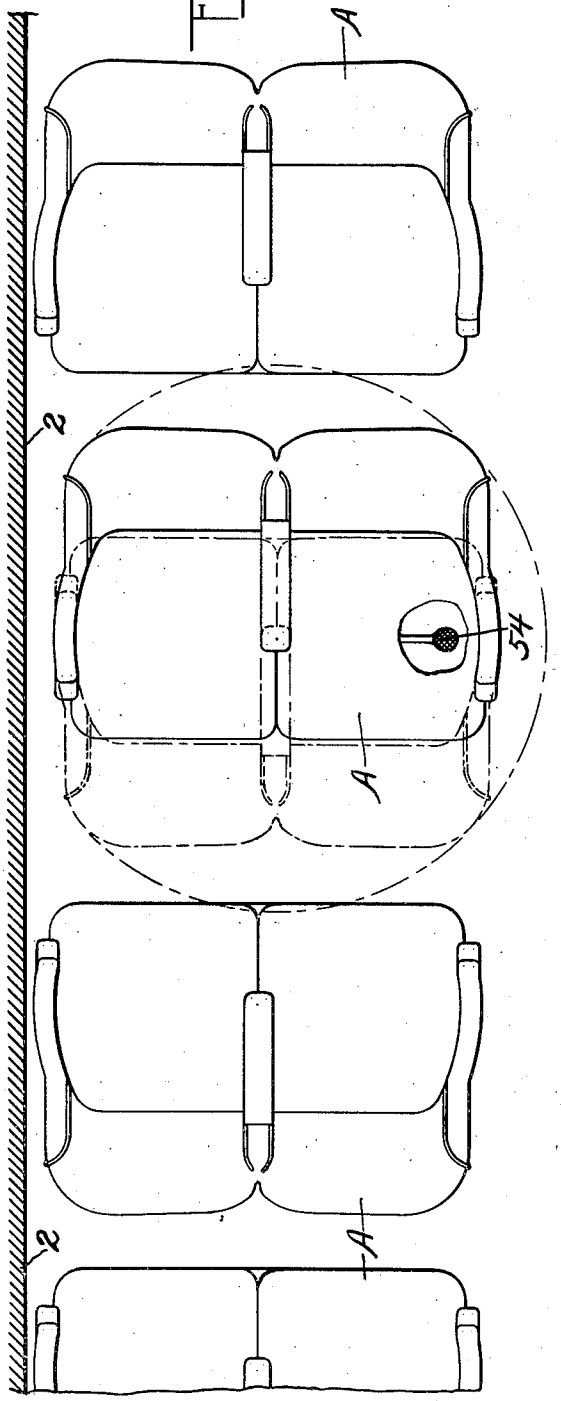
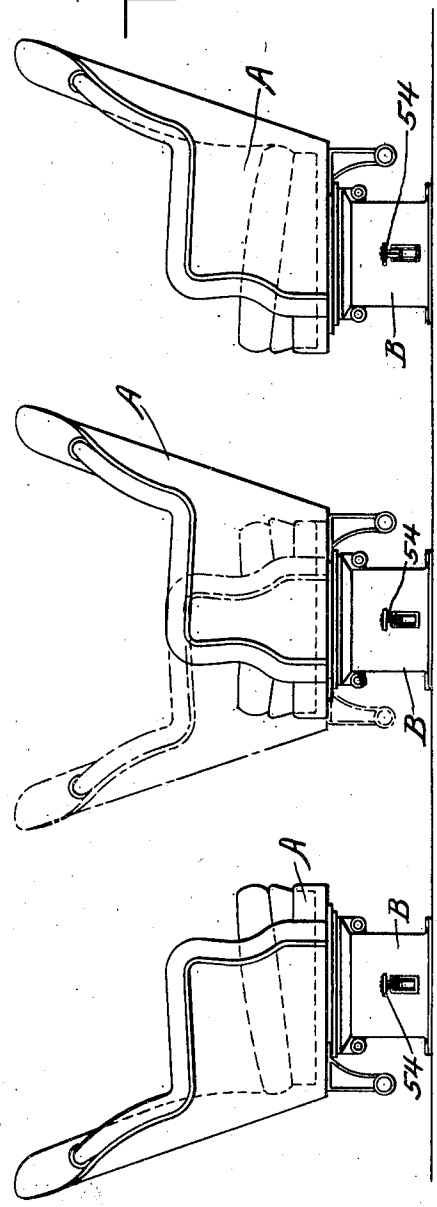


Fig. 2.



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CAR SEAT

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Fig. 3.

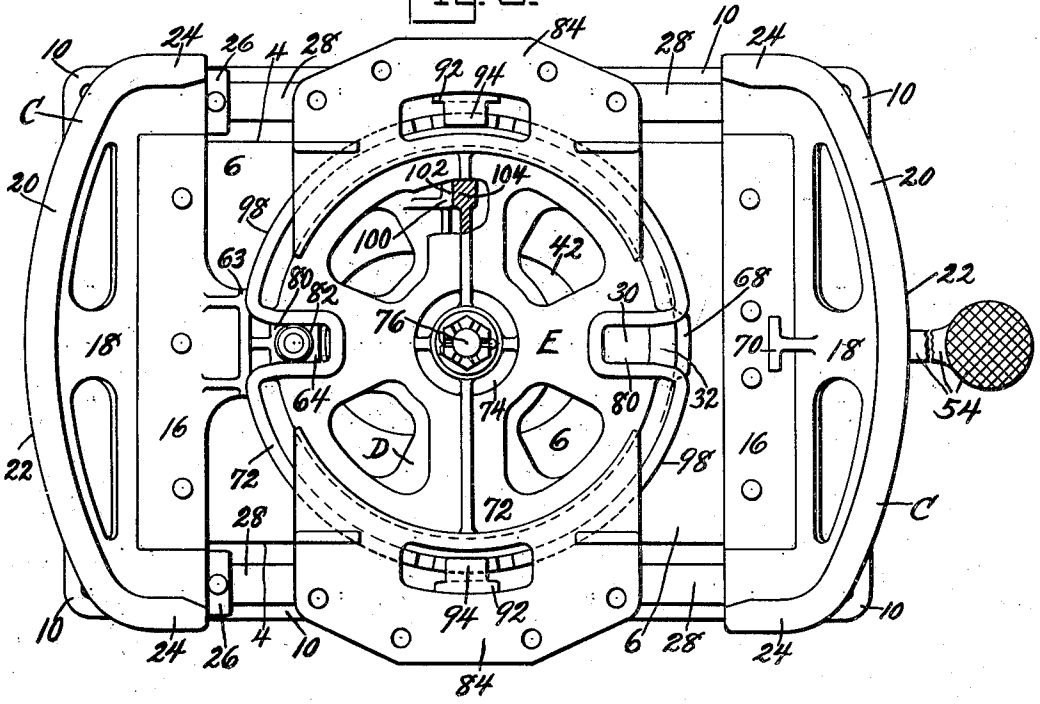

Fig. 4.

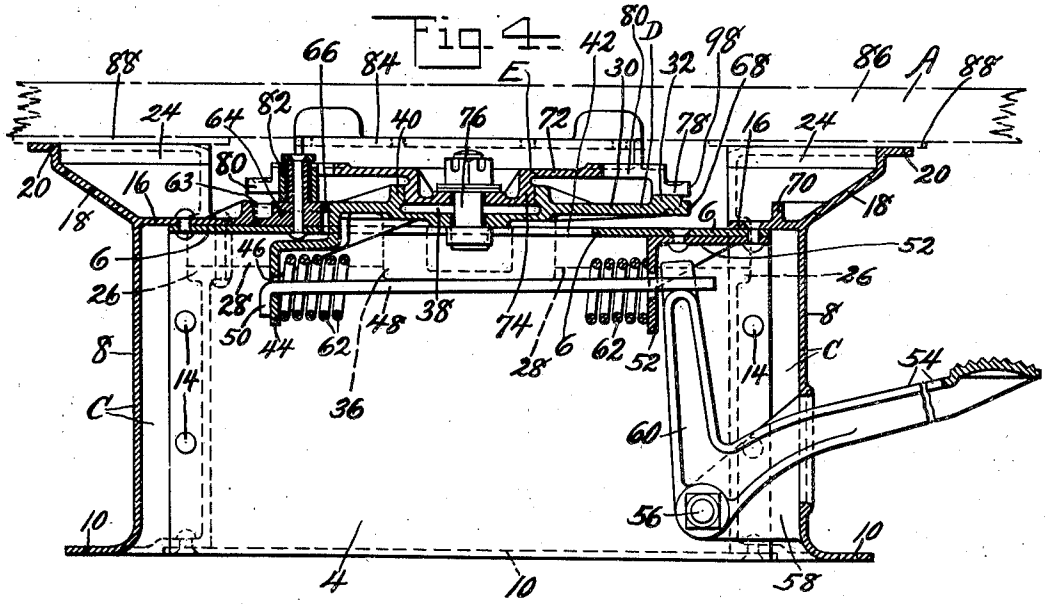

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Fig. 5.

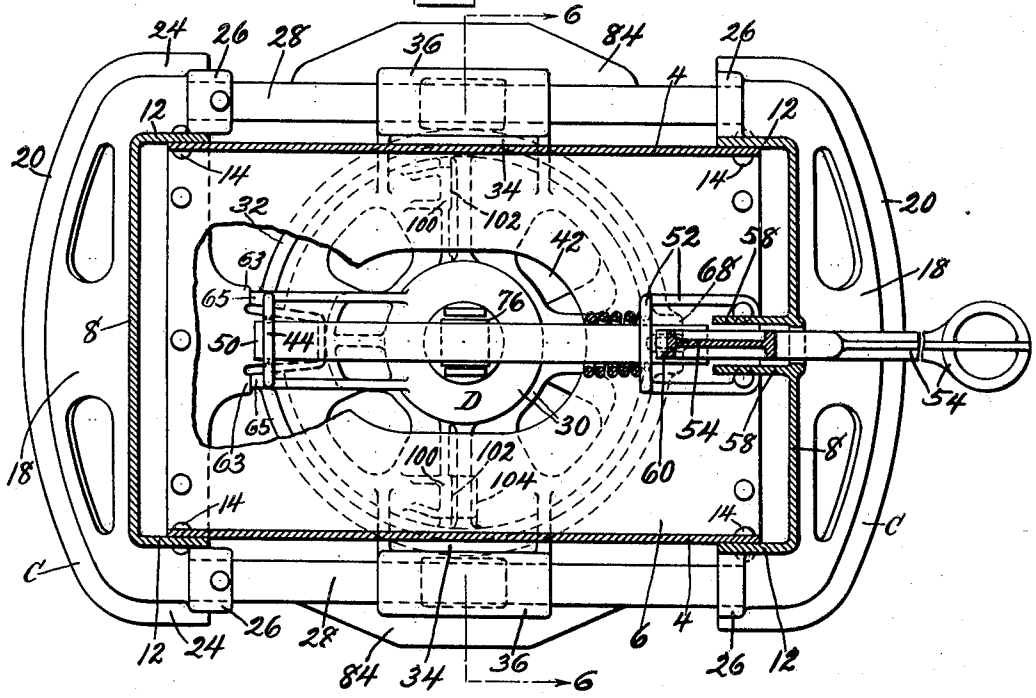
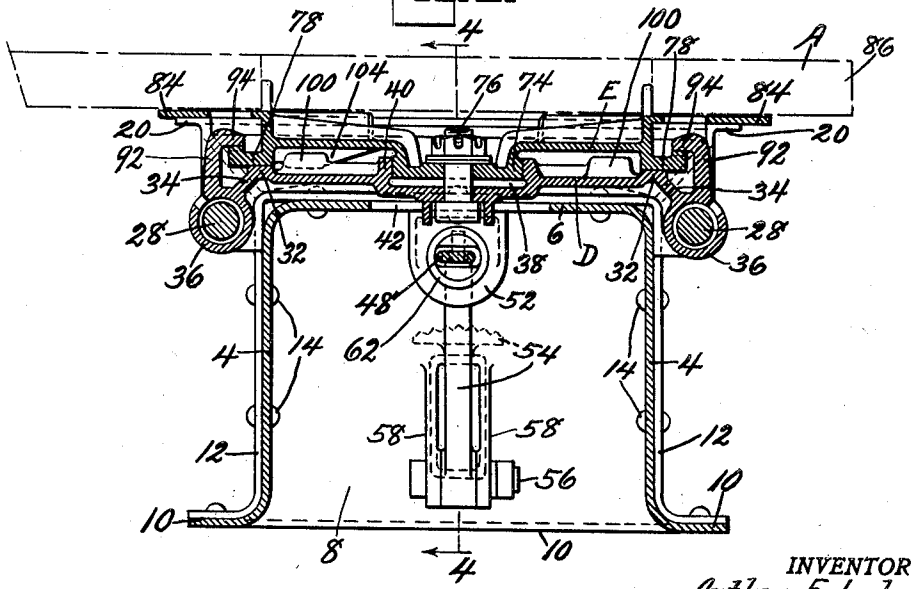


Fig. 6.



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CAR SEAT

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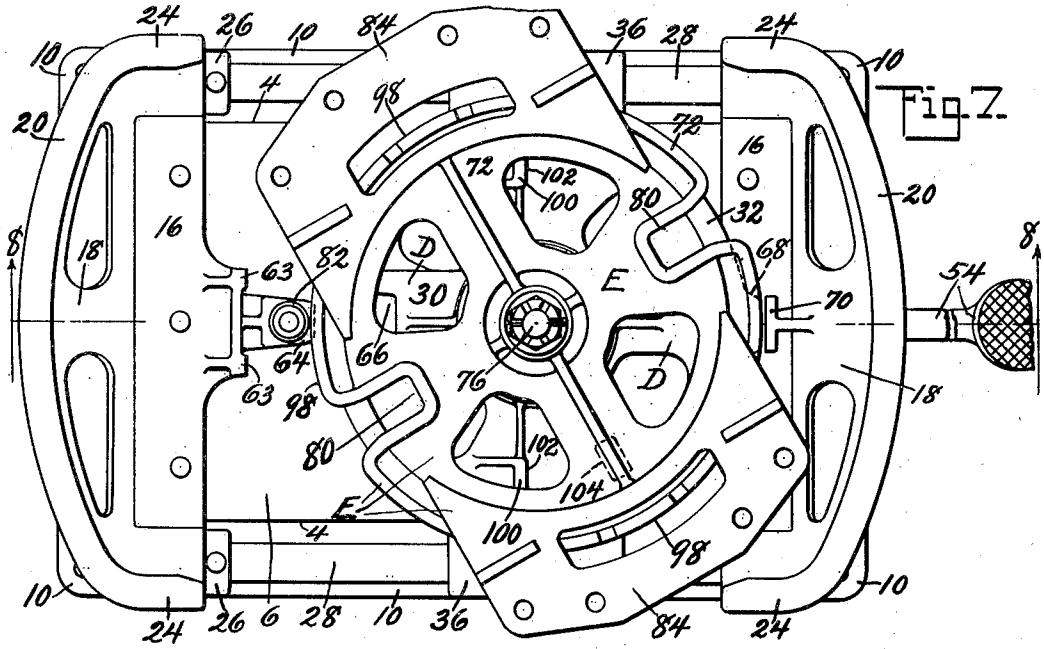

Fig. 7.

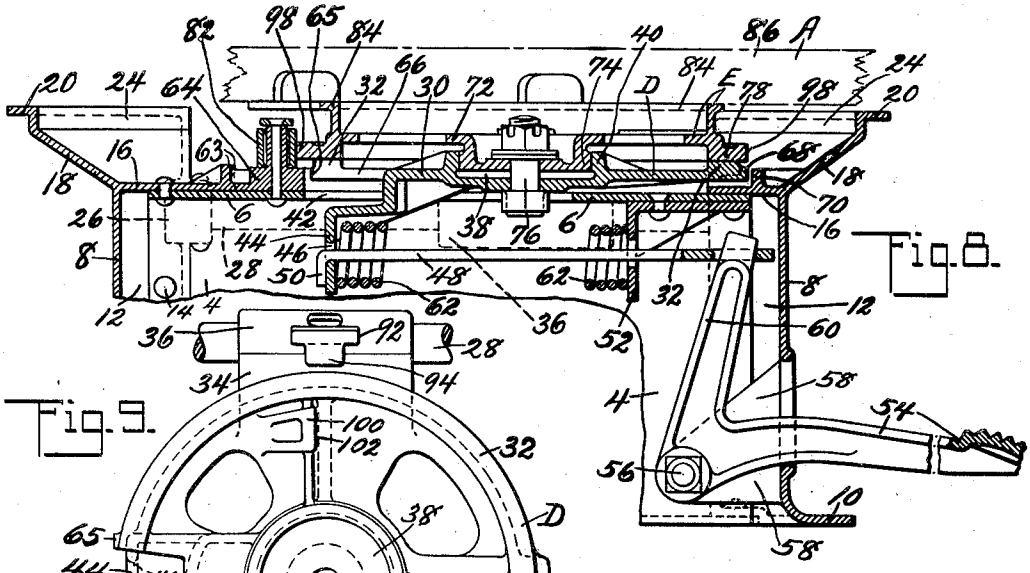

Fig. 8.

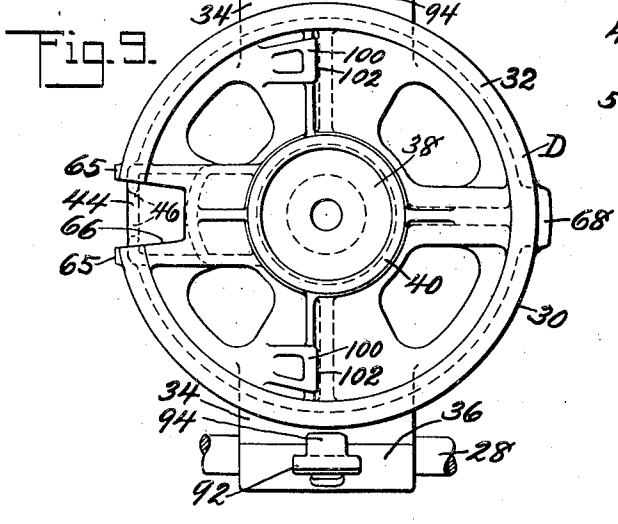

Fig. 9.

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Fig. 10.

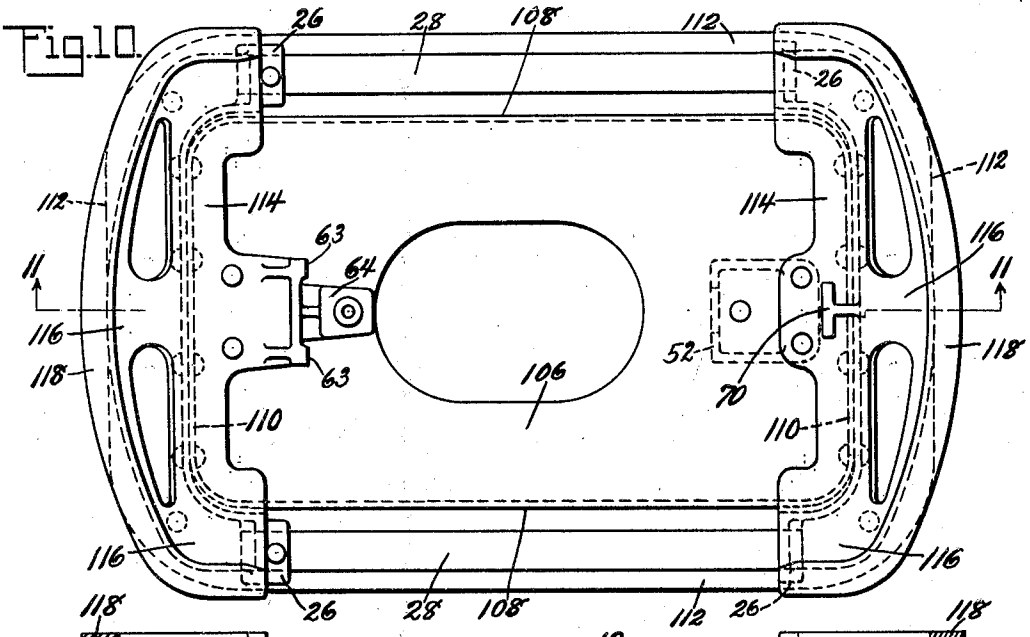


Fig. 11.

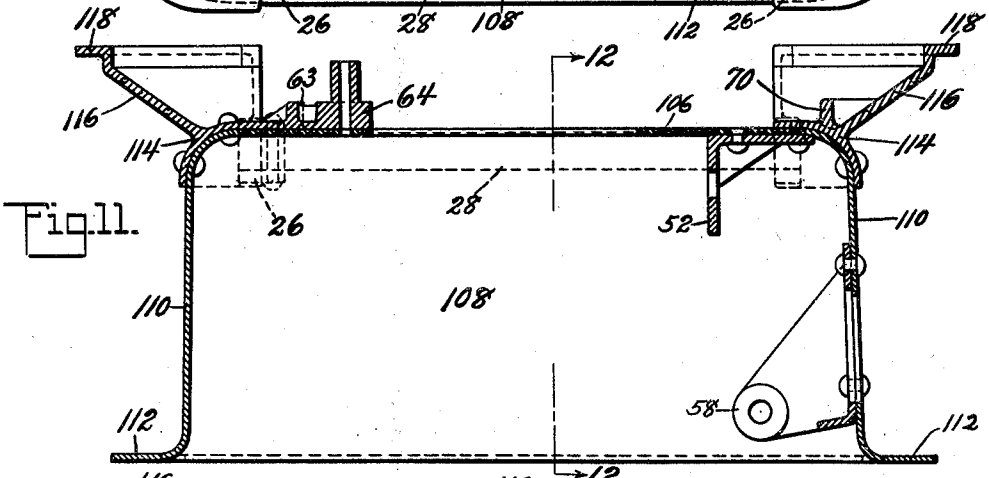
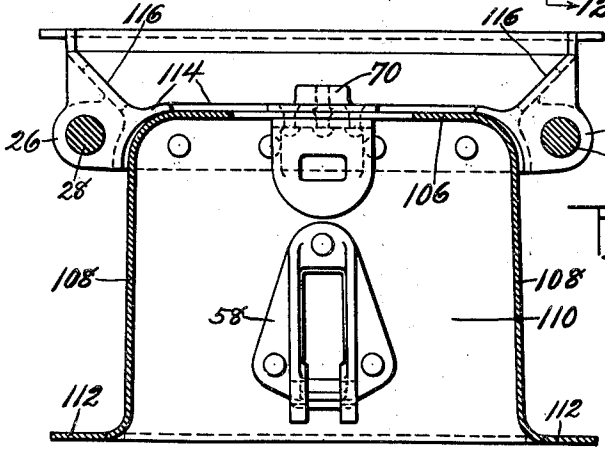


Fig. 12.



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Patented Oct. 16, 1934

1,977,485

UNITED STATES PATENT OFFICE

1,977,485

CAR SEAT

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Application February 27, 1933, Serial No. 658,742

11 Claims. (Cl. 155—96)

This invention relates generally to seats and has particular reference to seats for railway cars or other passenger-carrying vehicles adapted to be rotated to face towards either end of the car.

One object of this invention is the provision of a new and improved railway car seat having a seat portion or body mounted for horizontal shifting and rotation.

Another object of this invention is the provision of a car seat having a horizontally shiftable seat plate carrier which rotatably supports a seat plate.

Still another object of this invention is the provision of a new and improved pedestal for railway car seats.

A further object of this invention is the provision of a new and improved combined seat plate carrier and seat plate construction for railway car seats.

Other objects and advantages of this invention will be apparent from the following description taken in conjunction with the accompanying drawings in which:

Figure 1 is a top plan view of a portion of a row of seats, one of the seats being shown in full lines in one position and in dotted lines when facing in the opposite direction; the seat referred to being shown in horizontally shifted position.

Fig. 2 is a side elevation of the seats shown in Fig. 1.

Fig. 3 is a top plan view of the seat base.

Fig. 4 is a sectional view on the line 4—4, Fig. 6.

Fig. 5 is an inverted view of the construction shown in Fig. 3, the pedestal being shown in section.

Fig. 6 is a sectional view on the line 6—6, Fig. 5.

Fig. 7 is a plan view showing the construction illustrated in Fig. 3 but in which the seat plate carrier and seat plate are shifted and the seat plate is shown in partially rotated position.

Fig. 8 is a sectional view on the line 8—8, Fig. 7.

Fig. 9 is a plan view of the seat plate carrier.

Fig. 10 is a top plan view of a modified form of pedestal.

Fig. 11 is a sectional view on the line 11—11, Fig. 10, and

Fig. 12 is a sectional view on the line 12—12, Fig. 11.

Referring now more particularly to the drawings, Figs. 1 and 2 show several seats arranged in a car adjacent a side wall 2, the seats each including a seat body indicated generally at A and a base indicated generally at B to which the body A is connected in such a manner as to be capable of horizontal shifting and rotation, as presently to be described.

The base B comprises a pedestal having side walls 4, a top wall 6 and end walls 8, the lower edge portions of the side and end walls being outwardly flanged to provide supporting portions 10. In the instance shown in Figs. 3 to 8, inclusive, the side walls and top are formed as a metal pressing of substantially inverted U shape and the pressing extends between and is connected to end castings of which the end walls 8 are integral parts. The end castings are indicated generally at C and comprise the before-mentioned end walls 8 and inwardly directed flanges 12 formed along the side edge portions of the end walls 8 and lapping the end portions of the side walls 4 of the pedestal, as clearly shown in Fig. 5. Suitable fasteners such as the rivets 14 are provided for connecting the end castings to the side walls 4 of the pedestal. As shown in Figs. 4 and 8, the end castings C also comprise inwardly extending flanges 16 formed with the end walls 8 and extending between the side flanges 12 and overlapping the top wall 6 of the pedestal and secured to the latter by suitable fasteners. Formed as parts of end castings C and extending upwardly at an outward incline therefrom are side body supports 18, the upper edge portions of which are outwardly flanged to provide shoulders 20 arranged outside the vertical planes of the pedestal walls and upon which the seat body A is adapted to rest when in normal position. As viewed in plan in Fig. 3, the shoulders 20 have a curved central portion 22 and parallel straight end portions 24, the portions 24 of said castings being longitudinally alined as shown clearly in Fig. 3.

Formed with the end castings are sockets or bearings 26 which support guide rods 28 arranged parallel but in spaced relation relative to the side walls 4 of the pedestal. Slidably supported on the rods 28 which serve as tracks is a seat body supporting device formed of connected elements comprising a seat plate carrier D and a seat plate E. The seat plate carrier D is preferably of the form shown in Figs. 4, 6, 8 and 9 and comprises a substantially circular frame 30 having an annular raised portion adjacent its margin constituting a supporting shoulder 32 on which the seat plate E is supported, as more fully described hereinafter, and oppositely arranged downwardly deflected extensions or projections 34 which terminate in tubular bearings 36 slidably mounted on the tracks 28, see Fig. 6. The frame 30 is provided with a centrally arranged hub recess 38 concentric with shoulder 32 defined by an annu-

lar upwardly projecting flange 40. Formed with the frame 30 and extending through an opening 42 in the top wall 6 of the pedestal is a spring seat member 44 having an opening 46 through which one end portion of an actuating rod 48 extends, the latter having a retaining flange 50 engaging the spring seat member 44, as shown clearly in Fig. 8, and its opposite end extended through and supported by a spring bracket 52 depending from the top wall 6 of the pedestal. The rod 48 is adapted to be actuated to cause shifting of the seat plate carrier on the tracks 28 by means of a foot pedal 54 pivoted at 56 to a bracket 58 secured to the end wall 8 of the pedestal and having one arm 60 thereof connected to the rod, as shown clearly in Figs. 4 and 8. A spring 62 is interposed between the spring seat member 44 and the bracket 52, said spring surrounding the rod 48 and being of such form as to constantly urge the seat plate carrier to the left as viewed in Fig. 4.

Movement of the seat plate carrier in response to action of the spring 62 is limited by contact of the seat plate carrier with a stop on the pedestal. In the form shown in the drawings the seat plate carrier is provided with stop members 65 arranged respectively on opposite sides of a radial slot 66 and in such a position as to contact with spaced abutments 63 formed with one of the end castings (see Fig. 7) adjacent a stud 64, the latter being so arranged as to be received within the slot 66. Movement of the carrier in the opposite direction when the foot pedal 54 is actuated is limited by contact of a stop member 68 arranged diametrically opposite the recess 66 with an abutment 70 formed with the opposite end casting, as shown in Fig. 7.

The seat plate E is shown clearly in Figs. 3 and 7 and comprises a frame 72 substantially circular in the instance shown and having a concentrically arranged depending hub 74 rotatably fitted in the hub recess 38 in the seat plate carrier frame 30 (see Figs. 4 and 8). The seat plate and seat plate carrier are preferably connected by means of a bolt 76 arranged at substantially the center of rotation of the seat plate, the bolt obviously preventing vertical movement of the seat plate relative to the seat plate carrier. The marginal edge portion of the frame 72 is downwardly offset to provide an annular bearing portion 78 which rests upon the shoulder 32 of the seat plate carrier whereby the seat plate is supported. The seat plate is provided with diametrically opposite radial slots 80 in which roller 82 carried by stud 64 is positioned when the seat body A is in either of its normal positions whereby the seat plate and hence the seat body is held against rotation on the seat plate carrier. The seat plate also includes oppositely arranged seat body attaching portions 84 which are arranged at an elevation above the circular frame 72 of the seat plate and project beyond the marginal edge thereof and are adapted to be secured to the seat body A, portions of the frame of the latter being indicated in Fig. 4 at 86 and having wear plates 88 secured thereto in such a position as to bear on the shoulders 20 of the end castings. In the construction just described it is apparent that the seat body A is provided with wide supporting surfaces arranged adjacent the end portions of said body for the purpose of supporting said body in such a manner that, when in service there will be no tendency of tilting when in its normal position.

Extending upwardly from the bearings 36 are oppositely arranged retainers in the form of hook-shaped elements 92, the hook end portions 94 of which are arranged over and in contact with the upper surface of the bearing portion 73 of the seat plate, as shown clearly in Fig. 6, thus furnishing additional means for holding the seat plate against vertical movement relative to the seat plate carrier.

In service the car seat normally assumes the position shown in Fig. 3 in which it can be noted that the roller 32 is arranged in one of the recesses 80 of the seat plate and as shown in Fig. 4 the seat plate carrier is in its normal position with the stud 64 in the slot 66 thereof. To rotate the seat so that it will face in the opposite direction the foot pedal 54 is depressed, which causes the rod 48 to actuate or shift the seat plate carrier relative to the pedestal to the position shown in Figs. 7 and 8; shifting movement being limited by contact of stop 68 with abutment 70. Shifting of the seat plate carrier as just described takes place on the tracks 28 and the seat plate E obviously is shifted relative to the pedestal because of its connection with the seat plate carrier, thus the seat plate is freed from its cooperative relation with the roller 82 and may be rotated. Upon rotation of the seat plate from the position shown in Fig. 3 the marginal edge 98 of the seat plate engages the roller 82 as shown in Figs. 7 and 8 and hence the seat plate is retained in its shifted position until the opposite recess alines with the roller 82 whereupon the seat plate and the seat plate carrier are free to shift in response to the action of the spring 62 to cause the roller 82 to be engaged within the recess in the seat plate and also to cause the stop members 63 to be again arranged in cooperative relation with the stops 65. Rotation of the seat plate is about the bolt 76 as a center and within the recess 38, the cooperation of the hub 74 and the flange 40 retaining the seat plate and seat plate carrier in their proper relative positions.

Formed on the seat plate carrier D are spaced stops 100, the effective surfaces 102 of which face in the same direction and are so arranged as to contact with an abutment 104 depending from the seat plate, as shown clearly in Figs. 3, 6 and 7, the relative positions of the stops 100 and abutment 104 being such as to permit 180° rotation of the seat and in a direction such that when turning the seat from one position to face the same in the opposite direction the initial movement of the seat back is toward the aisle of the car. This is necessary because of the fact that it is desirable to arrange the seats as close to the wall 2 of the car as possible as shown in Fig. 1. The stops 100 are so arranged relative to the abutment 104 and the stud 64 that upon contact of abutment 104 with either of the stops 100 the appropriate recess or slot in the seat plate will be alined with the roller 82.

Figs. 10, 11 and 12 illustrate a modified form of pedestal, the same comprising a unitary pressing forming the top 106, side walls 108 and end walls 110, the said walls having supporting flanges 112 at their lower portions.

In the form shown in these figures, the seat body supporting members are independent castings secured to opposite end portions of the pedestal and each comprising a base portion 114 curved in conformity with the curve at the upper portion of the end wall so as to rest upon the top of the pedestal and against the end wall. Fasteners such as rivets or the like secure these members to the pedestal. These members also include upwardly extending outwardly inclined

body portions 116 the upper portions of which are formed to provide horizontal supporting flanges 118. The bearings 26 shown, for example, in Fig. 5 are duplicated in the modification shown in Figs. 10, 11 and 12.

The drawings herein illustrate certain embodiments of the invention, but it is to be understood that various changes in the form and proportions of the construction may be made within the scope of the appended claims without departing from the spirit of the invention.

What is claimed is:

1. In a seat, a seat body, a seat body support comprising a rotatable member and a non-rotatable member, a pedestal on which said seat body support is slidably mounted including upright walls, and seat body supporting elements formed with the pedestal and having their effective portions arranged outside the vertical planes of the pedestal walls whereby the seat body is supported at widely separated zones.

2. In a seat, a pedestal, a two-part seat body, support laterally movable in a horizontal plane over the pedestal, one of said parts being rotatably mounted on the other part adjacent the marginal edge portion of the latter and having a portion thereof rotatably interfitted in said other part at a zone concentric with respect to the supported portion thereof and spaced centrally a substantial distance from the said supported portion, means connecting the parts at the interfitted portions and constituting substantially a central pivot, and means on the pedestal normally in cooperative relation with the rotatable part of the seat body support in such a manner as to retain said part in predetermined position.

3. In a car seat, a seat body, and supporting means therefor comprising a pedestal including end castings having upwardly and outwardly offset extensions providing supporting shoulders arranged substantial distances outwardly of the castings and with which the body is engaged, and an intermediate pressed metal portion of substantially inverted U-shape connected with the castings and constituting pedestal side walls and top and having its lower edge portions outwardly flanged to provide supporting elements.

4. In a seat, a pedestal having track members, a seat plate carrier slidably supported by the track members and provided with an annular supporting shoulder and a recess concentric with respect to said shoulder, a seat plate supported on the shoulder, a hub member depending from the seat plate and rotatably fitted within the recess, means connecting the seat plate and seat plate carrier at the interfitted hub and recess and so formed as to retain the seat plate and seat plate carrier in assembled relation, and lever means supported by the pedestal and connected to the seat plate carrier for shifting the seat plate carrier and seat plate relative to the pedestal.

5. In a seat having a pedestal, supporting elements secured to the pedestal, a seat plate carrier slidably mounted on the supporting elements and provided with a recessed portion and an annular supporting shoulder, a seat plate rotatably mounted on the shoulder, a hub depending from the seat plate and rotatably fitted within the recess, a restraining element on the pedestal with which the seat plate is normally engaged in such a manner as to prevent rotation of said seat plate, and lever actuated means supported by the pedestal and connected to the seat plate carrier and operable to shift said carrier and seat plate relative to the pedestal to free the seat plate from the restraining element.

6. In a seat having a pedestal, supporting elements secured to the pedestal, a seat plate carrier slidably mounted on the supporting elements and provided with an annular supporting shoulder and a recess concentric with respect to said shoulder, a seat plate rotatably supported on the shoulder and provided with oppositely arranged outwardly opening slots, a hub member formed with the seat plate and rotatably fitted within the recess, retaining elements on the seat plate carrier cooperating with the seat plate in such a manner as to prevent vertical shifting of the latter relative to the seat plate carrier, a stud secured to the pedestal and constituting a stop member, spring means connected with the seat plate carrier and acting to retain the seat plate carrier in contact with the stop member and to retain one of the beforementioned slots in cooperative relation with the stud whereby the seat plate is restrained against rotation, and lever operated means connected with the seat plate carrier and operative to shift the latter and its associated seat plate to free said seat plate from the stud.

7. In a seat, a pedestal, a multi-part seat body supporting element slidably supported by the pedestal in such a manner as to be laterally movable thereover in a horizontal plane, one of the parts thereof being rotatably interfitted in the other part at approximately its central zone and having its marginal portion resting upon said other part, means connecting the parts at the interfitted portions so formed and arranged as to prevent relative vertical movement of said parts, and means on the pedestal normally in cooperative relation with the rotatable part of the supporting element in such a manner as to retain said rotatable part in predetermined position.

8. In a shiftable and rotatable seat, a pedestal, a seat body supporting device laterally movable over the upper surface of the pedestal in a single horizontal plane and comprising a seat plate carrier provided with a recessed portion, a seat plate rotatably supported by the seat plate carrier adjacent the marginal edge portion of the latter and provided with a depending hub arranged in said recessed portion of the seat plate carrier, and retaining elements attached to the seat plate carrier and having portions thereof engaged with the seat plate at its marginal edge portion in such a manner as to prevent vertical shifting of the seat plate relative to the seat plate carrier.

9. In a seat, a pedestal, a seat plate carrier laterally movable in a uniform horizontal plane over the pedestal, said carrier being supported by said pedestal and comprising a plate-like member having a substantially centrally arranged recessed portion, a seat plate rotatably supported by the seat plate carrier, a hub depending from the seat plate and fitted in said recess, means connecting the seat plate and seat plate carrier to prevent vertical shifting of the seat plate relative to the carrier, stop members on the pedestal for limiting horizontal movement of the seat plate carrier, and means on the pedestal normally cooperating with the seat plate in such a manner as to restrain the latter against rotation.

10. In a seat, a pedestal, a seat plate carrier laterally movable in a single horizontal plane over an upper face of said pedestal and provided with a hub recess, a seat plate rotatably supported by the seat plate carrier, a hub depending from

the seat plate and fitted in said recess, means connecting the seat plate and seat plate carrier to prevent vertical shifting of the seat plate relative to the carrier, stop members on the pedestal for limiting sliding movement of the seat plate carrier, and means on the pedestal normally cooperating with the seat plate in such a manner as to restrain the latter against rotation.

11. In a seat, a pedestal, a seat plate carrier laterally movable in a uniform horizontal plane over the pedestal, said seat plate carrier comprising a plate-like member having a substantially centrally arranged recess, a seat plate rotatably supported at its marginal portion on the marginal edge portion of the seat plate carrier, a hub depending from the seat plate and spaced centrally from the supported portion thereof and fitted in said recess, means connecting the seat plate and seat plate carrier at the upper surface of the marginal portion of the seat plate to prevent vertical shifting of the seat plate relative to the seat plate carrier, stop members on the pedestal with which the seat plate carrier is adapted to cooperate to limit sliding movement of said carrier, and means on the pedestal cooperating with the seat plate in such a manner as to restrain the latter against rotation.

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