

July 19, 1938.

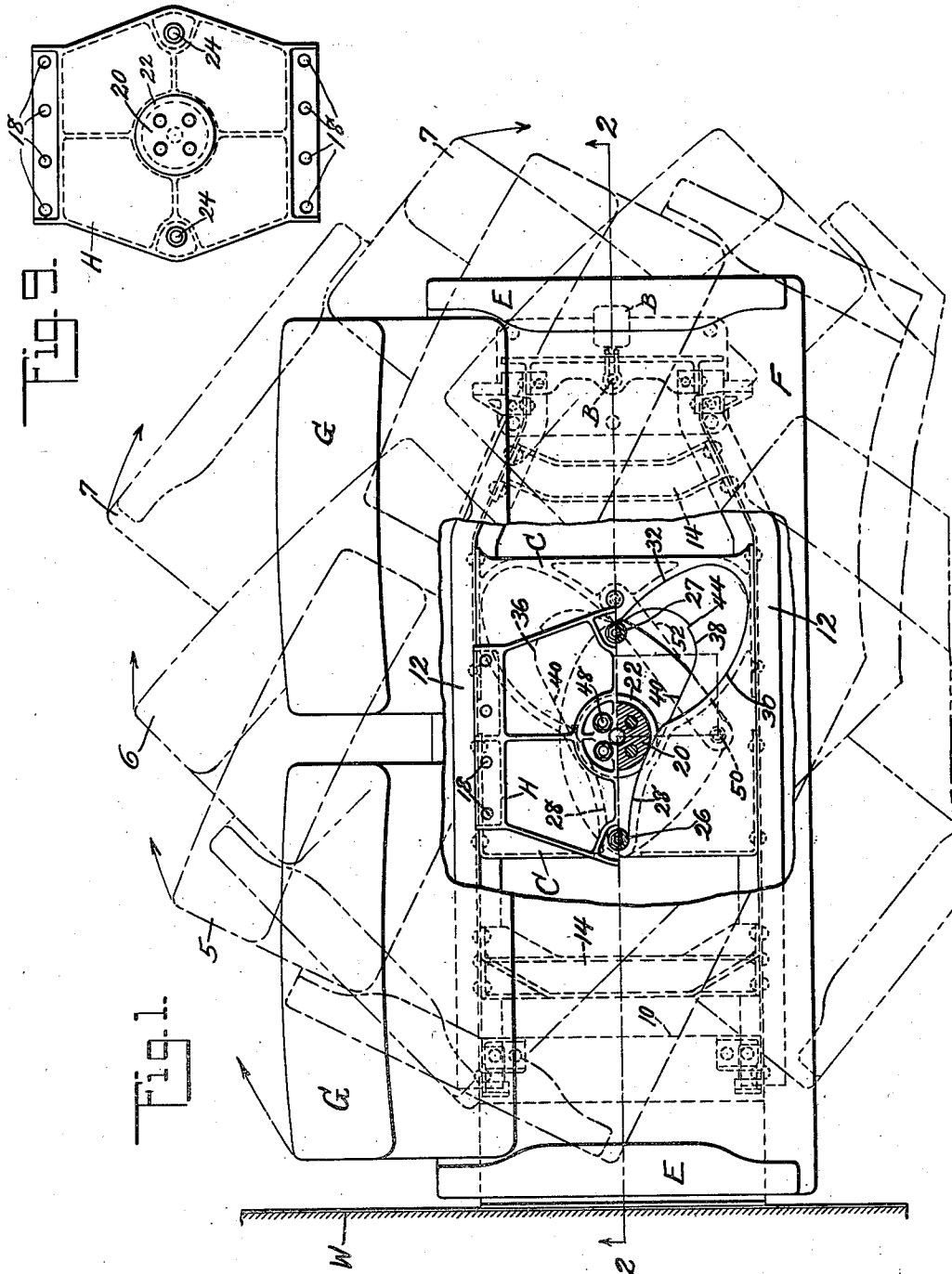
V. WILLOUGHBY

2,124,501

REVOLVING SEAT

Filed March 29, 1935

5 Sheets-Sheet 1



INVENTOR
Victor Willoughby
BY *Ronald U. Rich*
ATTORNEY

July 19, 1938.

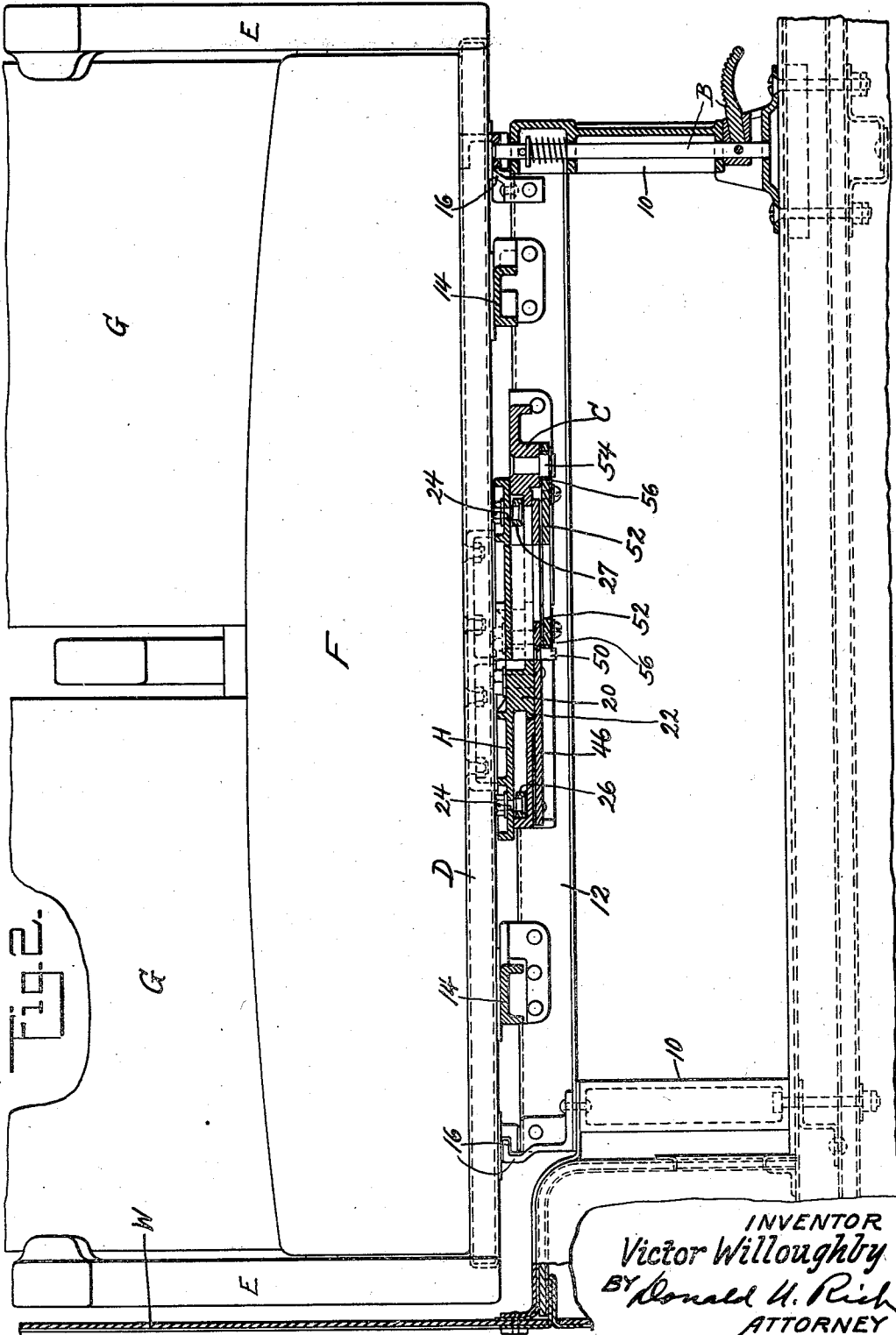
V. WILLOUGHBY

2,124,501

REVOLVING SEAT

Filed March 29, 1935

5 Sheets—Sheet 2



July 19, 1938.

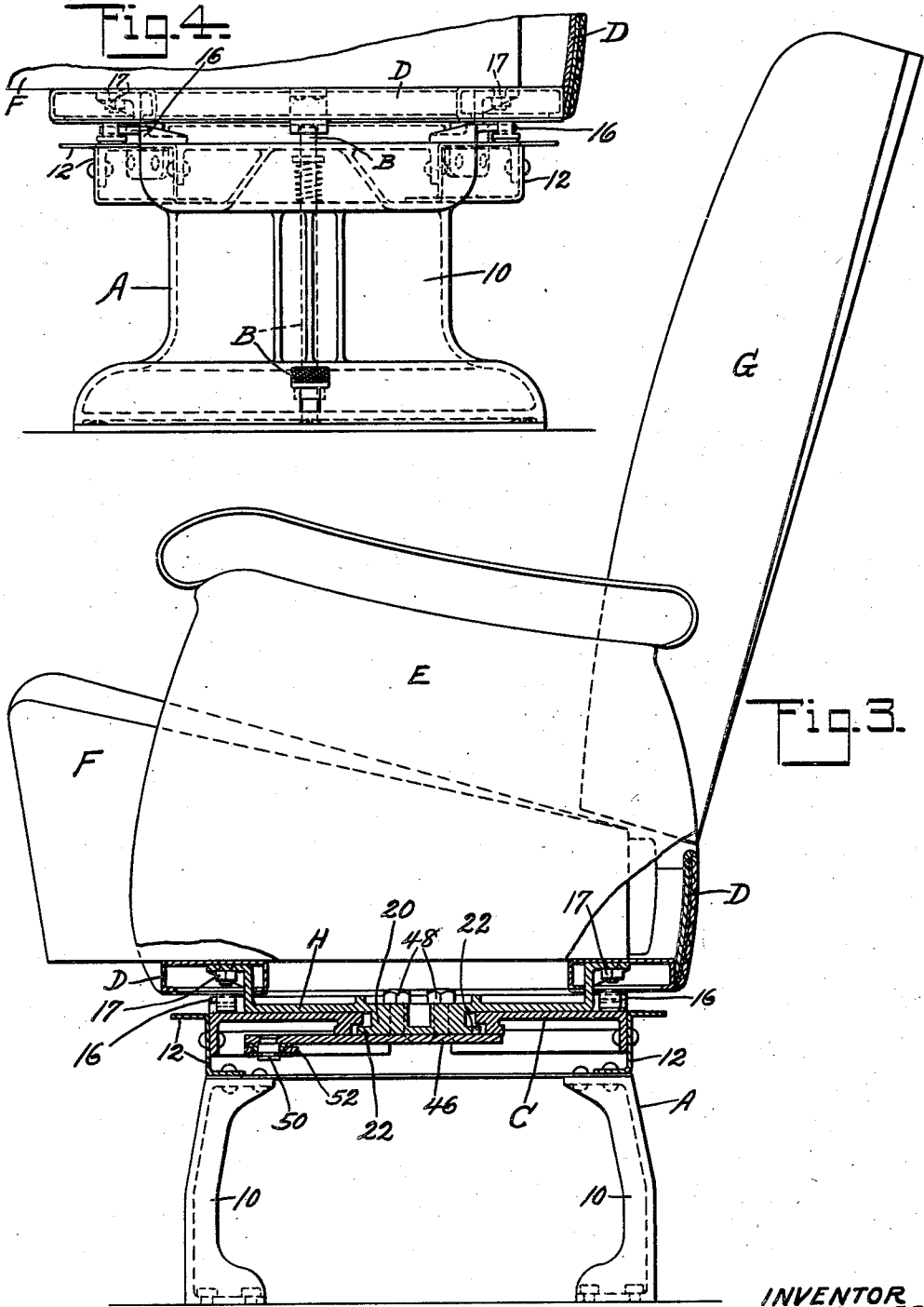
V. WILLOUGHBY

2,124,501

REVOLVING SEAT

Filed March 29, 1935

5 Sheets-Sheet 3



INVENTOR
Victor Willoughby
BY *Donald U. Rich*
ATTORNEY

July 19, 1938.

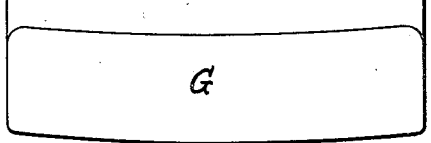
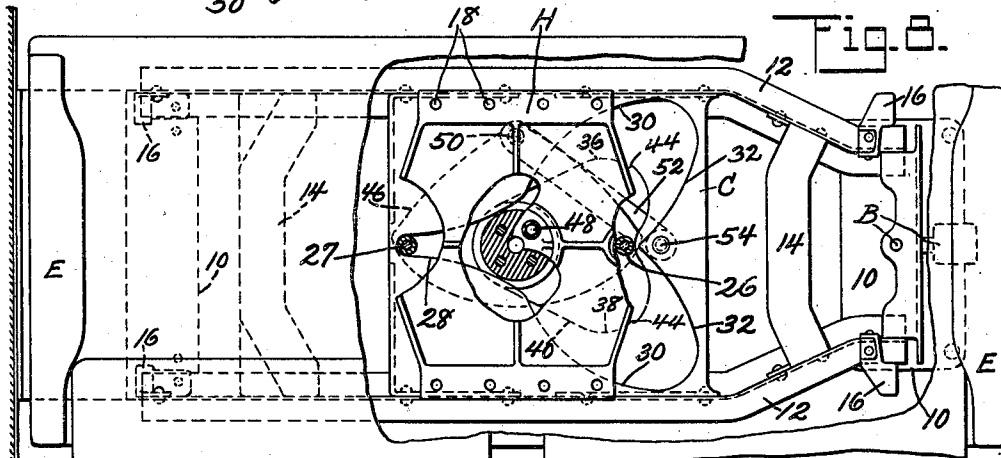
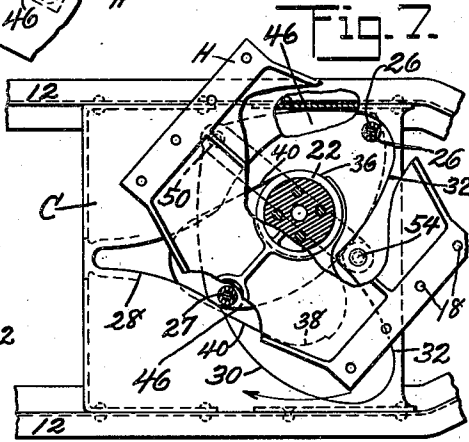
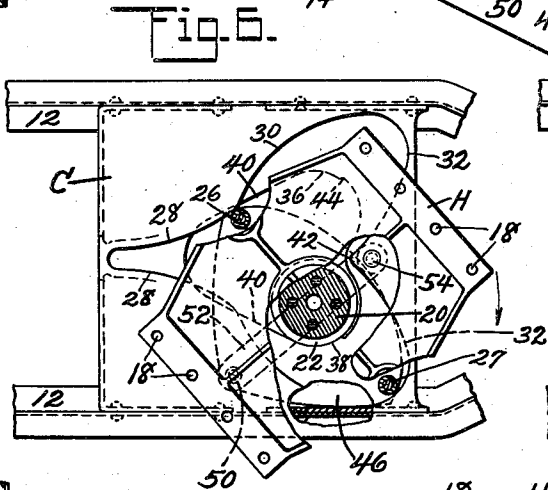
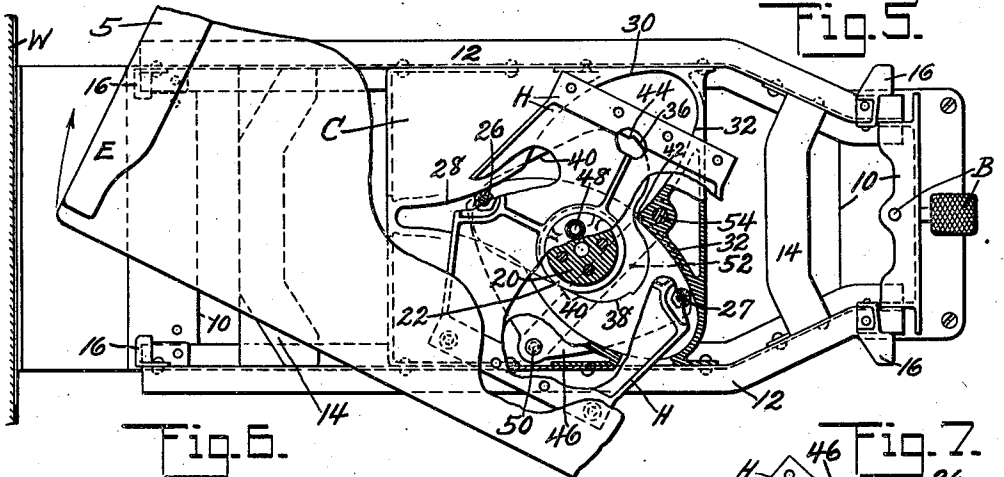
V. WILLOUGHBY

2,124,501

REVOLVING SEAT

Filed March 29, 1935

5 Sheets-Sheet 4



INVENTOR
Victor Willoughby
BY Donald H. Rich
ATTORNEY

July 19, 1938.

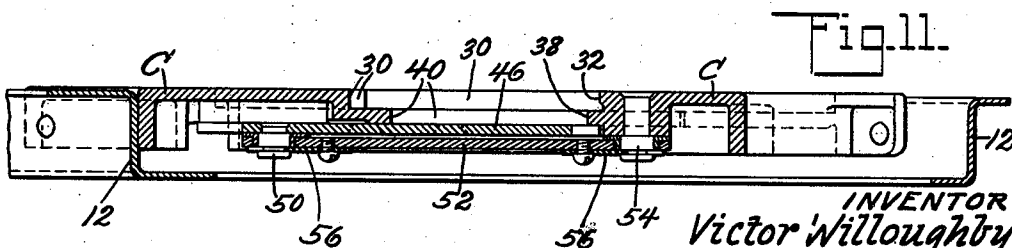
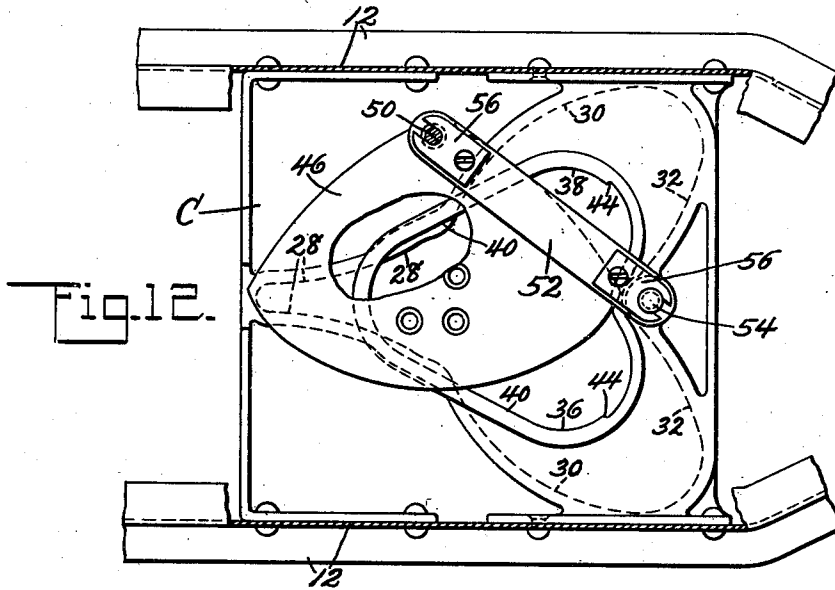
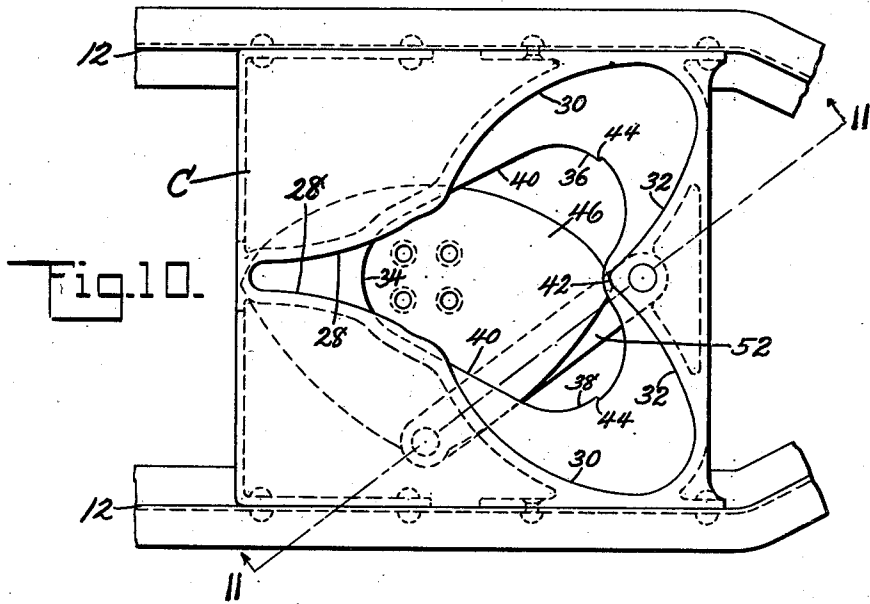
V. WILLOUGHBY

2,124,501

REVOLVING SEAT

Filed March 29, 1935

5 Sheets-Sheet 5



INVENTOR
Victor Willoughby
BY Donald H. Rich
ATTORNEY

UNITED STATES PATENT OFFICE

2,124,501

REVOLVING SEAT

Victor Willoughby, Ridgewood, N. J., assignor to
American Car and Foundry Company, New
York, N. Y., a corporation of New Jersey

Application March 29, 1935, Serial No. 13,588

27 Claims. (Cl. 155—96)

This invention relates to car seats, and more particularly to the reversing mechanism for seats which may be alternately faced in opposite directions.

5 It has been customary in the previous construction of seats to form the back and cushion separately and provide mechanism permitting the back to be positioned at opposite sides of the cushion as desired. This construction practically
10 precluded the building of a comfortable seat since neither could the cushion be properly shaped and upholstered, nor could the back be properly formed and its inclination made adjustable. The use of seats properly designed for
15 comfort and revolving on fixed pivots has been suggested but such a construction is wasteful of space since the seat end must be spaced sufficiently from the wall to permit the corners of the seat to clear the wall upon rotation.

20 It is an object of this invention to provide a properly designed seat having the cushion and back supported on a rigid base, the entire unit being revoluble with minimum wall clearance.

25 It is a further object of this invention to provide seat reversing mechanism which causes the seat to move laterally away from the wall during the initial rotation of the seat, and laterally toward the wall during the final rotation of the seat.

30 It is a still further object of this invention to provide a mechanism utilizing a double cam arrangement which will cause lateral as well as permit rotational movement.

35 These and other objects will be apparent to one skilled in the art from a study of the following description taken in conjunction with the accompanying drawings in which

40 Figure 1 is a plan view of a seat with parts broken away to show the reversing mechanism and likewise showing the seat in various positions of movement;

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1;

45 Fig. 3 is an end elevation of the seat, and a central sectional view of the reversing mechanism;

Fig. 4 is an end elevation of the seat and base frames;

50 Figs. 5, 6, 7 and 8 are plan views of cam mechanism and showing the seat in progressive positions of reversal from the position shown in Fig. 1;

Fig. 9 is a plan view of the cam follower plate to which the seat frame is attached;

55 Fig. 10 is a plan view of the rigid cam plate;

Fig. 11 is a sectional view taken on line 11—11 of Fig. 10;

Fig. 12 is a bottom plan view of the cam plate with the cam control bar and fastening plate in position.

5 Referring now to the drawings in which like reference characters refer to like parts throughout the several views, the base frame A comprises standards 10 connected by suitable longitudinal members 12 of Z or other formation
10 which are in turn connected by transverse members 14, adapted to support the seat in its position for occupancy and by a cam plate C which will later be more fully described. Hook shaped
15 brackets 16 are provided at the four corners of the base frame and engage members on the seat to prevent lifting or tilting of the seat on the base frame. The outer standard, which is preferably made with a solid web, carries a lock pin
20 and foot treadle assembly B adapted to lock the seat against rotation on the base frame.

25 The revoluble seat frame D is provided with ends E, and portions to support the cushion F and the back G which may, if desired be of the adjustable inclining type.

30 As clearly shown in the drawings, a cam follower plate H is provided (shown in detail in Fig. 9) having a body portion 17 and upwardly offset end flanges 18 to which the seat base is
35 secured as by fasteners 17 passing through openings 18. Plate H is rotatably supported on the cam plate C as shown clearly in Figure 3.

40 The follower plate H is provided with a plurality of depending follower elements, one thereof being substantially centrally arranged and comprising a depending projection 20 having a
45 substantially annular lip 22 arranged to engage a cam of the cam plate C to guide the plate H during at least a portion of its rotation, as hereinafter more clearly pointed out. The other followers are bearings in the form of rollers 26
50 and 27 supported on bolts or the like arranged in openings 24 in the follower plate (see Fig. 9); the rollers being spaced on opposite sides of the projection 20 and being arranged to engage another
45 cam of the plate C, as hereinafter described.

55 The cam plate C, in the form illustrated in the drawings, constitutes an upper portion of the base frame but this is merely illustrative. Plate C is more clearly illustrated in Figures 10, 11 and 12 and is formed with a plurality of continuous
cams indicated generally as outer cam U and inner cam L. Each cam is provided with a plurality of cam surfaces of varying degrees of curvature, though as will later be apparent, the de-

gree of curvature may be varied to suit particular conditions, but the respective cams U and L have their surfaces correlated whereby to effect desired rotation of the plate H. As illustrated in the drawings, the plate C is provided with a cut-away or recessed portion of relatively large area to form the outer cam U provided with cam surfaces 28, 30 and 32 (see Fig. 10) which surfaces may, for convenience, be termed internal cam surfaces. The curved surfaces 28 are divergent and merge with reversely curved surfaces 30; the latter merging with curved surfaces 32 which converge to a point 33 located diametrically opposite the juncture of the surfaces 28.

The recessed portion of plate C is cut away to provide the inner cam L which has cam surfaces comprising curved sector walls 34, 36 and 38 respectively; wall 34 merging with walls 36 and 38 by divergent walls 40, while walls 36 and 38 are joined with reversely curved wall 42. For convenience, the walls 34, 36, 38, 40 and 42 may also be termed internal cam surfaces. As clearly shown in Figures 10 and 12 the surfaces 36 and 38 are provided with steps 44 for a purpose to be hereinafter described. Attention is directed to curved surfaces 30 and 42 and it can be seen in the drawings, particularly Figure 10, that they are concentric with a pivot 54 arranged in line with the juncture of surfaces 28 and point 33.

Secured to the lower end of projection 20 by fasteners 48 is a retaining plate 46, provided with a depending projection 50 on which is journaled one end portion of a cam follower control bar 52 (see Fig. 11), the opposite end of which is journaled on pivot 54 of cam plate C. Suitable means, such as the slotted plates 56 (see Figs. 11 and 12), secured to bar 52 and engaged in notches in projection 50 and pivot 54, are provided to secure the bar against accidental displacement.

Having given a detailed description of the position, form and relation of parts, a description of the operation of the mechanism will now be given. Assuming the seat in the position shown in full lines of Fig. 1 in which position the seat is held against tilting by the lugs 16 and supported by braces 14 all as previously described. Force applied to the lock mechanism B will release the seat for rotation to the various positions shown on Fig. 1 and designated as positions 5, 6 and 7 and finally to the fully reversed position shown in Fig. 8.

Pressure applied to the seat back or other seat portion will cause rotation of the seat body which will, of course, rotate cam follower plate H and cause lip 22 to roll along wall 40 while roller 26 riding along wall 28 forces the seat out away from the car wall W. Meanwhile the projection 50, which may be termed the apparent and/or oscillating center of rotation is swung in a direction opposite to the direction of movement of the seat, thus still further increasing the clearance between the seat and car wall and bringing the parts to the position denoted 5 in Fig. 1 and shown in Fig. 5. Continued rotation of the seat causes lip 22 to come to rest against wall sector 38, at which time roller 26 is at the junction of walls 28 and 30, the roller 27 is in the arc connecting walls 30 and 32 and about to assume control, while projection 50 has moved in the direction of seat rotation and returned to its original position, all as shown by Fig. 6 which corresponds to position 6 of Fig. 1. Continued rotation of the seat at this time causes the lip 22 of guide projection 20 to roll on curved surface

38 until roller 27 assumes control of the follower plate due to its engagement with curved surface 30. During this continued movement the lip 22 rolls along the curved surface 38 and over the curved surface 42, thereby acting in conjunction with the roller 27 during the rotation of the cam follower plate.

It will be noted from the position of parts shown in Fig. 6 that the apparent and/or oscillating center of rotation 50 has started its movement in the same direction as that of the seat and that the center line connecting the projections 50 and 54 must cross the axis of the projection 20. In order to permit this cross-center movement the step 44 in the sector walls 36 and 38 is necessary. It is also to be noted from Fig. 6 that the roller 27 is assuming control and that the apparent and/or fixed center of rotation 50 is now shifted to the fixed projection or pivot 54.

Continued rotation of the seat with roller 27 riding on wall 30, which is concentric with projection 54, causes the seat to rotate about the fixed center 54, lip 22 moving from sector 38 to sector 36 and the cam control bar with its projection 50 moving in the direction of seat rotation to a position on the opposite side of the base frame, the parts then being in the positions as shown by Fig. 7.

Further movement of the seat causes roller 26 riding on wall 32 to force the roller 27 along wall 28 to its final position and the lip 22 rolling along the wall 40 of the lower cam to its final position. The oscillating center of rotation continues in the direction of seat rotation in order to provide additional wall clearance, then as the seat approaches its final position it moves in a direction opposite to that in which the seat is moving, thus in cooperation with the cams bringing the seat to its reversed position adjacent the wall as shown in Fig. 8.

From the description it can be seen that the pivots 54 and 50 provide fixed and oscillating centers of rotation for the follower plate H. It will also be apparent from the description that the guide follower 20, of which lip 22 is a part, and the spaced follower members 26 and 27 cooperate sequentially with the respective cams U and L during rotation of said follower plate from one seat facing position to another.

Throughout the reversal of the seat as described, the plate 46 moving beneath the cam plate C has assured the retention of the seat in its position on the base frame.

In the final or passenger carrying position one roller is held between walls 28 by the other roller bearing against the point joining wall 32 and the seat is held against lateral movement while the lock B holds the seat against rotation.

Briefly it is seen that the seat rotates first about an oscillating center adjacent the front edge of the seat and which center moves away from the wall until such time as the seat is fully clear of the wall, the seat then rotating about a fixed center until such time as it can be shifted back toward the wall; the oscillating center in the meantime transferring its position and operating as before but in reverse to shift the seat, back against the wall during the final rotation of the seat about the oscillating center.

The parts have been shown and described as of certain form, position and relation but it is to be understood that this is purely representative, as various modifications thereof are possible without departing from the scope of the appended claims.

I claim:

1. In a car seat reversing mechanism, a base frame having a cam plate carried thereby, independent cam surfaces formed in said plate, a seat frame rotatably supported by said cam plate, said seat frame having cam follower means projecting therefrom and engaging said cam surfaces at spaced points, and control means pivotally secured to said seat frame and cam plate, said cam surfaces and control means being relatively so formed and arranged as to effect rotation of the seat in sequence about an oscillating and a fixed center.

2. In a car seat reversing mechanism, a support, a cam plate mounted on said support and formed to provide independent cams with cam surfaces of varying degrees of curvature, a cam follower plate rotatably mounted on the cam plate, a plurality of followers secured to the follower plate and adapted to engage the cam surfaces, said cam surfaces being correlated in such a manner that the followers act sequentially thereagainst to effect horizontal shifting of the follower plate during rotation thereof, and cam control means pivotally connected to the cam plate and follower plate in such a position as to provide fixed and oscillating centers of rotation for said follower plate in sequence during rotation.

3. In a car seat reversing mechanism, a support, a cam plate mounted on said support and formed to provide inner and outer continuous cams having cam surfaces of varying degrees of curvature, said cams being positioned one above the other, a cam follower plate rotatably mounted on the cam plate, a guide follower depending from the follower plate and adapted to engage the surface of the inner cam, and a plurality of followers depending from said follower plate in spaced relation to the guide follower and arranged to engage the surface of the outer cam, said cam surfaces and followers being relatively so formed and so arranged as to effect horizontal shifting of the follower plate during rotation thereof.

4. In a car seat reversing mechanism, a support, a cam plate carried by said support and having a pair of independent cams of varying degrees of curvature, a follower plate rotatably mounted on the cam plate, a substantially centrally arranged follower depending from the follower plate, bearing members substantially equidistantly spaced on opposite sides of said follower, said follower being adapted to engage one of said cams and said bearings engaging another of said cams, said cams being correlated and said follower and bearing members being relatively so arranged with respect to said cams as to effect horizontal shifting of the follower plate during rotation thereof.

5. In a car seat reversing mechanism, a horizontally positioned cam plate formed to provide a pair of independent cams having continuous cam surfaces of the same general contour, said cam surfaces being correspondingly positioned one substantially within the vertical confines of the other, a follower plate rotatably supported on the cam plate, a guide follower depending from the follower plate and engaging the inner of said cams, bearing members supported by the follower plate and arranged on opposite sides of the guide follower and engaging the other cam, and cam control means pivotally connected to the cam plate and follower plate for constraining movement of the follower plate during rotation.

6. In a car seat reversing mechanism, a pedestal, a cam plate supported by said pedestal and formed with a plurality of independent continuous internal cam surfaces of the same general contour, a follower plate rotatably supported on the cam plate, a guide follower secured to the follower plate and engaged with one of the surfaces of said cam plate, followers on opposite sides of said guide follower and engaged with another surface, said cam surfaces and followers being so formed and arranged as to effect horizontal shifting of the follower plate during its rotation, and retainer means connected to the follower plate and lapping the cam plate to retain said plates in assembled relation.

7. In a car seat reversing mechanism, a pedestal, a cam plate carried by said pedestal and having inner and outer independent continuous cam surfaces of respectively different contour, a follower plate rotatably supported on the cam plate, a guide follower depending from the follower plate and engaged with the inner cam surface, followers on opposite sides of the guide follower engaged with the outer cam surface, said cam surfaces and followers being respectively formed and arranged as to guide said follower plate during rotation thereof and to effect horizontal shifting of said follower plate during its rotation, and said cam surfaces and said followers being so arranged on the follower plate with respect to the cam surfaces as to act sequentially during rotation of the follower plate.

8. In a car seat reversing mechanism, a base, a cam plate mounted on said base and formed with inner and outer continuous cam surfaces of respectively different contour, a follower plate rotatably supported on the cam plate, a guide follower depending from the follower plate and engaged with the inner cam surface, followers on opposite sides of the guide follower engaged with the outer cam surface, said cam surfaces and followers being respectively formed and arranged as to guide said follower plate during rotation and to effect horizontal shifting of said follower plate during its rotation, and means cooperatively associated with the follower plate and cam plate to retain said plates in assembled relation.

9. In a car seat reversing mechanism, a base, a cam plate mounted on said base and having inner and outer continuous cam surfaces of respectively different contour, a follower plate rotatably supported on the cam plate, a guide follower depending from the follower plate and engaged with the inner cam surface, followers on opposite sides of the guide follower engaged with the outer cam surface, said cam surfaces and followers being respectively formed and arranged as to guide said follower plate during rotation and to effect horizontal shifting of said follower plate during its rotation, means cooperatively associated with the follower plate and cam plate to retain said plates in assembled position, and control means pivotally secured to the cam plate and follower plate for constraining movement of the follower plate during rotation.

10. In a car seat reversing mechanism, a pedestal, a cam plate mounted on said pedestal, a follower plate rotatably supported on said cam plate, said cam plate being formed to provide a plurality of independent continuous cams, followers on said follower plate engaging said cams, said cams and followers being relatively so formed and positioned as to effect horizontal shifting of the follower plate during its rotation, and cam control means pivotally connected to the cam plate and follower plate in such position as to provide

11. In a car seat reversing mechanism, a pedestal, a cam plate mounted on said pedestal, a follower plate rotatably supported on said cam plate, said cam plate being formed to provide a plurality of independent continuous cams, followers on said follower plate engaging said cams, said cams and followers being relatively so formed and positioned as to effect horizontal shifting of the follower plate during its rotation, and cam control means pivotally connected to the cam plate and follower plate in such position as to provide

oscillating and fixed centers of rotation for the follower plate acting sequentially during rotation of said follower plate.

11. In a car seat reversing mechanism, a base, a cam plate mounted on said base and provided with a recessed portion defining inner and outer continuous and superimposed cam surfaces, a follower plate rotatably supported on the cam plate and having followers depending therefrom engaged respectively with said cam surfaces, said surfaces and followers being relatively so positioned as to effect horizontal shifting of said follower plate during its rotation, and cam control means pivotally connected to the cam plate and the follower plate and so arranged as to provide fixed and oscillating centers acting sequentially to control rotation of the follower plate.

12. In a car seat reversing mechanism, a pedestal, a cam plate carried thereby and being recessed to provide independent inner and outer continuous cams having cam surfaces of respectively different contour, a cam follower plate supported on the cam plate and provided with a depending guide follower arranged to engage the surface of the inner cam, bearings spaced on opposite sides of the guide follower arranged to engage the surface of the outer cam, said cams being correlated in such a manner as to effect horizontal shifting of the follower plate during rotation thereof, and a control bar pivotally connected to the cam plate and follower plate in such relation to the cams that said follower plate is constrained to rotate sequentially substantially about the control bar pivots.

13. In a car seat, a support, a seat reversing mechanism including a fixed plate carried by said support and formed to provide a plurality of independent cam members each including a multiplicity of curved portions, a rotatable and shiftable cam follower plate positioned adjacent said fixed plate, a plurality of followers secured to the follower plate and engaging said cam members, a retainer plate positioned beneath said fixed plate and secured to one of said followers, and a control arm cooperating with said cam members and cam follower plate during its shifting operation and secured to said retainer plate at a point spaced from its connection with said follower, said control arm having fixed pivotal relation in respect to said support.

14. In a car seat, a support, seat reversing mechanism including a cam plate carried by said support and formed to provide a pair of superimposed independent cams having cam surfaces of the same general contour, one of said cam surfaces being substantially within the vertical confines of the other, said cam plate being formed with an opening the walls of which define portions of said cam surfaces, a follower plate rotatably and shiftable supported on the cam plate, a plurality of guide followers depending from the follower plate and each adapted to engage certain portions of said cam surfaces, one of said guide followers being substantially centrally positioned with respect to said follower plate, a control arm pivotally mounted on a fixed member and arranged to swing in a plane parallel to the movement of the follower plate, and means connecting the arm and one of said followers, said means being pivotally connected to said arm to permit a limited swinging movement of the latter during rotation of the follower.

15. In a car seat, a support, seat reversing mechanism including a cam plate carried by said support and formed to provide a pair of independ-

ent cams having cam surfaces of the same general contour, one of said cam surfaces being of a size to substantially confine the other cam surface within its vertical confines, said cam plate being formed with an opening the walls of which define portions of said cam surfaces, a follower plate rotatably and shiftable supported on the cam plate, a plurality of guide followers depending from the follower plate and each adapted to engage certain portions of said cam surfaces, one of said guide followers being substantially centrally positioned with respect to said follower plate, a control arm for said follower plate pivotally mounted on a fixed member and arranged to swing in a plane parallel to the movement of the follower plate, and means connecting one of said guide followers and arm.

16. In a car seat, a support, a seat reversing mechanism including a fixed cam plate carried by said support and formed to provide a plurality of independent cam members each including a plurality of curved portions, said fixed cam plate being formed with an opening, the walls defining the opening constituting at least certain of the curved portions of said cam members, a rotatable and shiftable follower plate positioned above the fixed plate, a follower positioned centrally of the follower plate and extending downwardly through the opening and engaging one of said cam members, a bearing member supported by the follower plate and engaging the other cam member, and a control arm mounted for swinging movement in a plane parallel to the plane of movement of said follower member and eccentrically connected with the said follower member to control its movement and permit sequential engagement between the cam members and the follower and bearing member.

17. In a car seat, a support, seat reversing mechanism including a cam plate carried by said support and formed to provide a plurality of independent cams having surfaces of the same general contour, a follower plate rotatably and shiftable supported on the cam plate, a plurality of followers carried by the follower plate and engaging said cams, a control member pivotally mounted at its outer end to a fixed member and capable of swinging movement, said control member being pivotally connected at its inner end with the follower plate, the arcuate path of the inner pivotal point intersecting the confines of said cams, and means for restraining the movement of said arm at spaced points in its travel to effect shifting movement of said follower plate during rotation.

18. In a car seat, a support, seat reversing mechanism including a cam plate carried by said support and formed to provide a plurality of independent cams having surfaces of the same general contour, a follower plate rotatably and shiftable supported on the cam plate, a plurality of followers carried by the follower plate and engaging said cams, a control member mounted on a fixed member for swinging movement and eccentrically and pivotally connected with said follower, the arcuate path of the pivotal point intersecting the confines of said cams, and means for restraining the movement of said arm at spaced points in its travel, whereby said follower plate will shift on its eccentric pivot during its rotary movement.

19. In a car seat, a support, seat reversing mechanism including a cam plate carried by said support and formed to provide a pair of independent cams having surfaces of the same general contour, said cam surfaces being correspondingly

positioned one substantially within the vertical confines of the other, a follower plate rotatably supported on the cam plate, a guide follower depending from the follower plate and engaging the inner of said cams, bearing members supported by the follower plate and engaging the other cam, and cam control means pivotally connected with the cam plate and follower plate for constraining movement of the follower plate during rotation.

20. In a car seat reversing mechanism, a pedestal, a cam plate supported by said pedestal and formed with superimposed cam surfaces, a cam follower plate rotatably supported on said cam plate, a guide element depending from said follower plate and arranged to engage the lower cam surface to guide the follower plate during at least a part of its rotation, spaced bearing members arranged to engage the upper cam surface to guide the follower plate during other parts of its rotation, and control means cooperating with said follower plate to cause a sequential engagement between the lower cam surface and the guide and the upper cam surface and bearing members.

21. In a car seat, a support, a seat reversing mechanism including a fixed cam plate carried by said support and formed to provide a plurality of independent cam members each including a series of curved portions, said fixed plate being formed with an opening, the walls defining the opening constituting certain of the curved portions of said cam members, a rotatable and shiftable follower plate positioned above the fixed cam plate, a plurality of followers depending from said follower plate and engaging said cam members, one of said depending followers being positioned substantially centrally of the follower plate, and a control arm mounted for swinging movement on a fixed member and connected with said follower plate at a point spaced from its center to permit shifting of the follower plate during its rotary movement.

22. In a car seat, a support, a seat reversing mechanism including a fixed plate carried by said support and formed to provide a plurality of independent cam members each including a plurality of curved portions, said fixed plate being formed with an opening, the walls defining the opening constituting at least certain of the curved portions of said cam members, a rotatable and shiftable follower plate positioned above the fixed plate, a plurality of guide followers depending from the follower plate and engaging said cam members, one of said guide followers being positioned substantially centrally of the follower plate and extending downwardly into the opening, a control arm pivotally connected to a fixed member at one end portion thereof, a retainer plate fixed to the centrally depending guide follower, said control arm being also pivotally connected to the retainer plate at a point spaced from the depending centrally positioned follower, whereby the follower plate and retainer plate may swing at the pivotal control arm connection at the retainer plate to shift the guide followers into sequential engagement with respective curved portions of said independent cam members during movement of said follower plate.

23. In a car seat, a support, seat reversing mechanism including a cam plate carried by said support and formed to provide a pair of independent cams having continuous cam surfaces of the same general contour, said cam surfaces being positioned in superimposed relation, said cam plate being formed with an opening the walls of

which define portions of said cam surfaces, a follower plate rotatably and shiftable supported on the cam plate, a guide follower depending from the follower plate and engaging one of said cams, bearing members supported by the follower plate and engaging the other cam, and a retaining plate positioned beneath the cam plate and secured to said guide follower.

24. In a car seat, a support, seat reversing mechanism including a cam plate carried by said support and formed with an enlarged opening, the walls of said opening defining a pair of independent cams each having continuous cam surfaces having a plurality of curved portions, a follower plate rotatably and shiftable supported on said cam plate, a guide follower depending from the follower plate and engaging one of said cam surfaces, bearing members supported by the follower plate and engaging the other cam surface at spaced points, a retaining plate secured to the depending guide follower and movable therewith, and control means pivotally mounted on a fixed axis cooperating with said cam members and swingingly mounted on said cam follower plate and pivotally secured to the retaining plate at a point spaced from the connection of said retaining plate with the guide follower whereby said follower plate is shifted on said pivot to sequentially engage the curved portions of said cam members during rotation and shifting movement.

25. In a car seat reversing mechanism, a support, a horizontally arranged cam plate formed with a plurality of independent continuous cam members of irregular contour carried by said support, a rotatable and shiftable cam follower plate positioned adjacent said cam plate, a plurality of followers secured to the follower plate and engaging said cam members, a control means arranged in cooperative relation with said cam members and cam followers whereby to shift said follower plate with respect to said cam plate to cause said followers to sequentially engage said cams during rotation and shifting movement of the follower plate.

26. In a car seat, a support, seat reversing mechanism including a fixed plate mounted on said support and formed to provide a plurality of independent cam members each including a plurality of curved portions, a rotatable and shiftable follower plate positioned adjacent said fixed plate, a plurality of followers secured to the follower plate and engaging said cam members, and control means cooperating with said cam members and cam follower plate in such a manner as to shift said follower plate with respect to the cam members to cause said followers to sequentially engage the curved portions of said cam members during rotation and shifting movement of the follower plate.

27. In a car seat reversing mechanism, a base, a cam plate supported by the base and formed to provide upper and lower cams each having a plurality of curved surfaces, a cam follower plate rotatably mounted on the cam plate, a follower depending substantially centrally from said follower plate and arranged to cooperate with one of said cams, and bearing members depending from the follower plate in spaced relation to said follower and arranged to cooperate with the other cam, said cams and follower and bearing members being relatively so arranged as to effect horizontal shifting of the follower plate during its rotation.