

March 27, 1945.

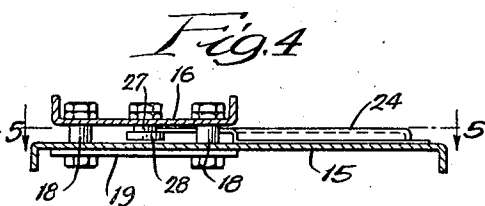
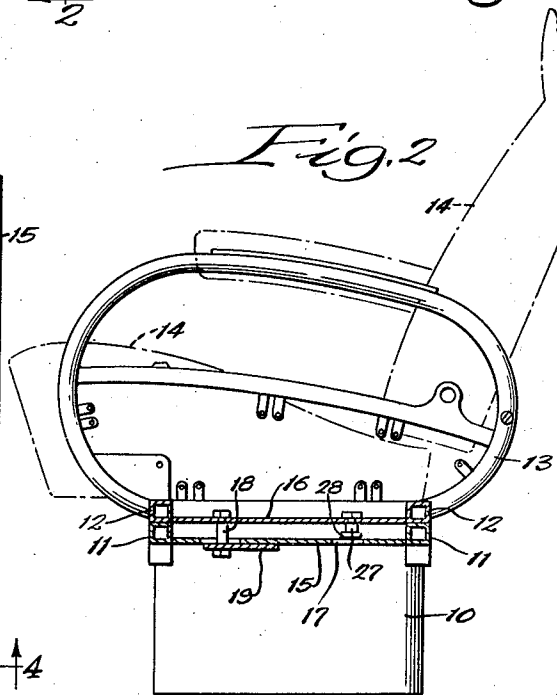
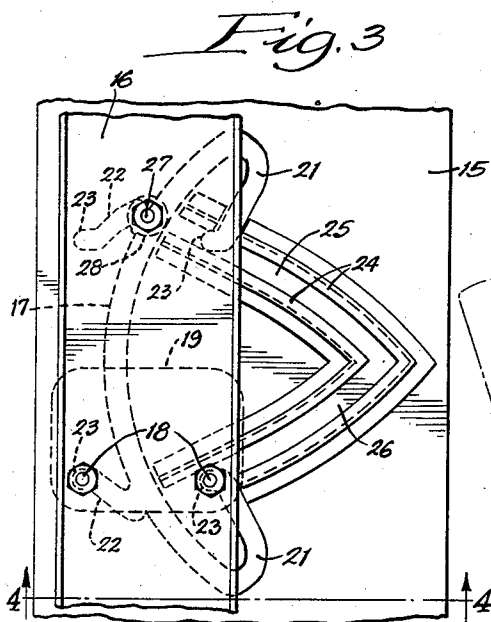
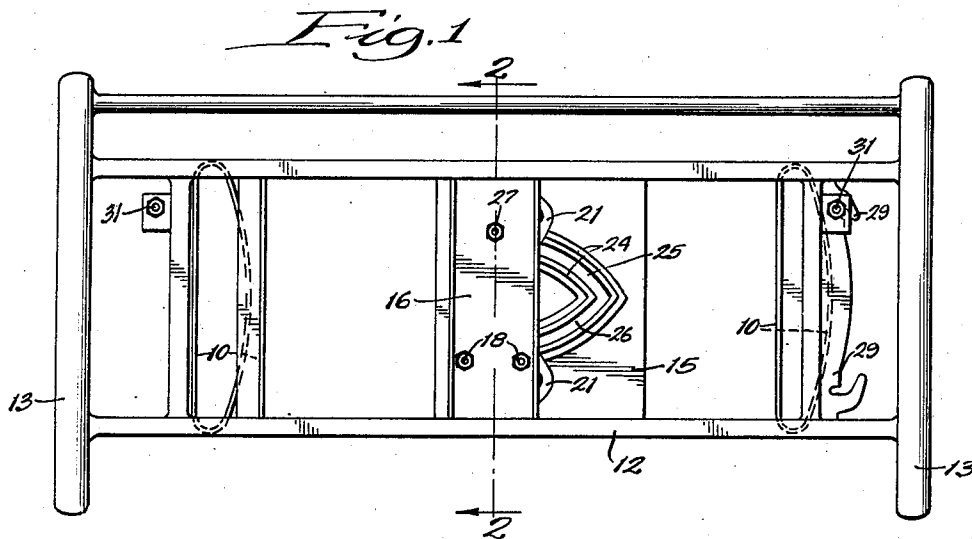
K. HORNER ET AL

2,372,495

SEAT

Filed July 10, 1944

2 Sheets-Sheet 1



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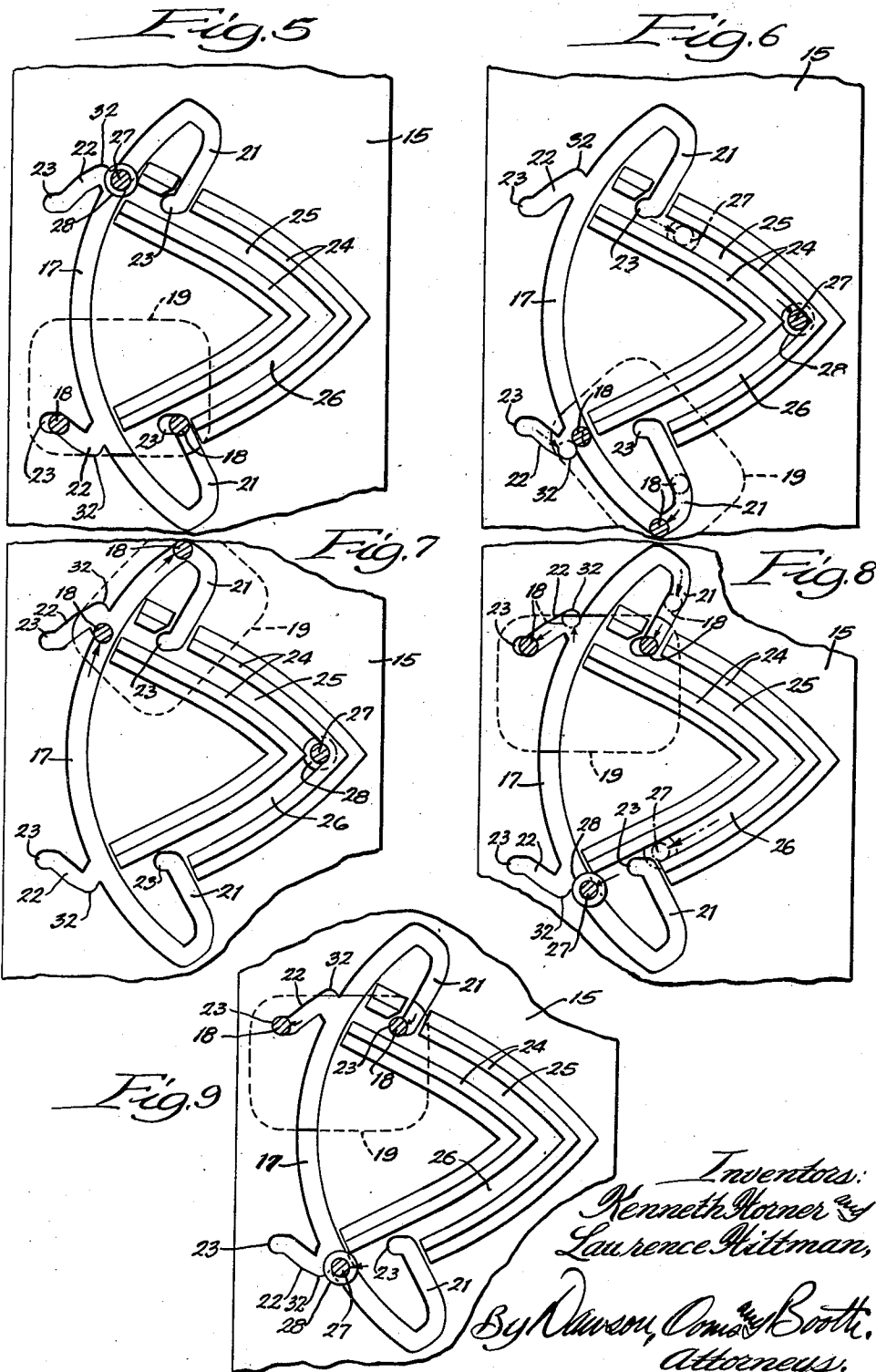
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UNITED STATES PATENT OFFICE

2,372,495

SEAT

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8 Claims. (Cl. 155—96)

This invention relates to seats and more particularly to seats adapted to be used in railroad cars and the like.

One of the objects of the invention is to provide a seat which may be mounted close to a wall of the car and which can be reversed by swinging the seat frame on its base without interference with the car wall.

Another object is to provide a seat including movably connected seat and base frames guided for swinging movement to reverse the seat independently on minimum seat centers.

Another object is to provide a seat including movably connected seat and base frames guided for swinging movement to reverse the seat by interengaging cam parts.

Another object is to provide a seat which is locked in either of its reversed positions against turning.

Still another object of the invention is to provide a seat in which guiding and locking of the seat frame are accomplished by three spaced follower pins slidable in cam tracks.

The above and other objects and advantages will be more readily apparent from the following description when read in connection with the accompanying drawings, in which

Figure 1 is a plan view of a seat embodying the invention with the cushions or upholstery omitted;

Figure 2 is a section on the line 2—2 of Figure 1;

Figure 3 is a partial plan view on an enlarged scale showing the cam parts;

Figure 4 is a section on the line 4—4 of Figure 3;

Figure 5 is a section on the line 5—5 of Figure 4; and

Figures 6 to 9 inclusive are views similar to Figure 5 showing the parts in different positions.

The seat as shown comprises a base frame including supporting pedestals 10 adapted to be permanently fixed to the floor of a car or the like and carrying a rigid upper frame 11 which is generally rectangular in outline as shown. A seat frame 12 is supported on the frame 11 and carries at its ends, arms 13. The seat frame 12 is adapted to be upholstered by cushions or the like as indicated in dotted lines at 14.

The seat and base frames are connected together by cam means including a plate 15 rigidly carried by the base frame and an overlying plate 16 carried by the seat frame. The plate 15 forming a part of the base frame has an arcuate cam slot 17 cut therein thru which a pair of spaced

5 follower pins 18 carried by the plate 16 extend. A fastening plate 19 underlies the plate 15 and is secured to the follower pins 18 to hold the frames together. The cam slot 17 extends generally transversely across the base frame and terminates at its ends in reverse loop portions 21. Spaced from the ends of the slot there are also short projecting slot portions 22. At the ends of the loop portions 21 and also at the ends of the slots 22 there are parallel locking portions 23 for locking the frames against turning as will appear later.

10 The plate 15 also carries additional cam tracks formed by arcuate flanged plates 24 projecting above the surface of the plate 15 and spaced to form a pair of arcuate cam tracks 25 and 26. Cam tracks 25 and 26 are connected at an acute angle and terminate adjacent the slots 17 so that the three cam track means together form in effect an equilateral triangle. A cam follower pin 27 is carried by the plate 16 and terminates in a roller 28 fitting under the flanges of the plates 24 to be guided in the tracks 25 and 26.

15 With the seat in the position shown in Figure 1 the two frames 11 and 12 lie parallel in superimposed position and the follower pins 18 and 27 occupy the position in the cam tracks shown in Figure 3. In this position the pins 18 lie in the locking projections 23 of one of the loops 21 and the adjacent one of the track projections 22. The pin 27 lies adjacent the junction of the opposite projection 22 with the slot 17. At this time engagement of the pins 18 in the locking projections prevents the frames from being turned relative to each other.

20 Additional locking of the frames may be provided if desired by a slotted bracket 29 on the base frame receiving locking pins 31 carried by the opposite ends of the seat frame 12. As will be seen in Figure 1 the bracket 29 is formed at each end with a slot portion lying parallel to the length of the base frame into which the locking pins extend when the seat is in its locked position.

25 To release the seat for reversing its position the seat may be grasped and moved lengthwise to the right as seen in Figure 1 to move the pins 31 out of the slots in the bracket 29. At the same time the pins 18 are moved out of locking projections 23 to the position shown in Figure 5. At this time the seat may be turned freely in a clockwise direction as seen in Figure 1. It will be noted that the first motion moves the left end of the seat away from a wall adjacent which it may be mounted and it will be observed that further turning movement of the seat never causes this

end of the seat frame to approach the wall so that the seat can be mounted closely adjacent the wall of a railroad car or the like.

After the seat has been moved to unlocked position, it may be turned clockwise to the position shown in Figure 6. During the first part of this motion the righthand one of the pins 18 will travel thru the reverse loop portion of the cam slot to the position shown in Figure 6. At the same time, the lefthand pin 18 will move in the slot projection 22 to the position shown in full lines. Simultaneously the pin 27 will travel the length of the track 25 to the junction of the track 25 with the track 26.

Upon further turning movement the pin 27 acts as a fixed pivot and the pins 18 travel freely thru the slot 17 to the position shown in Figure 7. When the parts reach this position the leading one of the pins 18 has reached the end of the slot 17 and the trailing one of the pins 18 has reached the point opposite the entrance to the slot projection 22.

Upon further turning movement the leading one of the pins 18 acts as the pivot and the pin 27 starts to travel thru the track 26. During the initial portion of this movement the trailing one of the pins 18 will move into a small pocket or notch indicated at 32 in the entering part of the slot projection 22. Thereafter the trailing pin 18 which is in the notch 32 becomes the pivot until the leading pin 18 reaches substantially the position shown in dotted lines in Figure 8. Upon further swinging movement the leading pin 18 continues to travel thru the reverse loop portion but since this lies at an angle to an arc about the notch 32, the trailing pin 18 will be forced into the slot projection 22. When the frames reach a parallel position the several pins will occupy the position shown in Figure 8, the pin 27 having at this time completed its travel thru the cam track 26.

To relock the seat in its reversed position, the seat frame is moved lengthwise to the left as seen in Figure 1 causing the pins 18 to move into the locking projections 23 of the opposite loop portion 21 and slot projection 22. At the same time the pin 31 at the left end of the frame 12, as seen in Figure 1, will move into the slot in the bracket 29 at the lower right part of Figure 1. The seat will, therefore, be locked in a position reversed from that shown in Figure 1. It will be apparent that the seat can be returned to a position shown in Figure 1 by reversing the above procedure and turning the seat frame counter-clockwise on the base frame.

While one embodiment of the invention has been shown and described in detail herein, it is to be understood that this is illustrative only and is not intended as a definition of the scope of the invention, reference being had to the appended claims for that purpose.

What is claimed is:

1. A seat comprising a base frame adapted to be secured to a floor, a seat frame movably supported on the base frame, cam tracks formed in one of the frames including three arcuate portions arranged in the form of a triangle with reverse loops at the ends of one of the track portions, and three cam followers on the other frame engaging the cam tracks and guiding the seat frame on the base frame.

2. A seat comprising a base frame adapted to be secured to a floor, a seat frame movably supported on the base frame, cam tracks formed on one of the frames including three arcuate por-

tions arranged in the form of a triangle, one of the track portions having reverse loops at its ends and laterally extending track projections spaced from its ends, and three spaced cam followers on the other frame movable in the cam tracks and guiding the frames during relative turning movement.

3. A seat comprising a base frame adapted to be secured to a floor, a seat frame movably supported on the base frame, cam tracks formed on one of the frames including three arcuate portions arranged in the form of a triangle, one of the track portions having reverse loops at its ends and laterally extending track projections spaced from its ends, a pair of closely spaced cam followers on the other movable in said one of the track portions, and a third cam follower on the other frame lying on a line at right angles to a line connecting said pair of cam followers movable in the other two of said track portions.

4. A seat comprising a base frame adapted to be secured to a floor, a seat frame movably supported on the base frame, cam tracks formed on one of the frames including three arcuate portions arranged in the form of a triangle, one of the track portions having reverse loops at its ends and laterally extending track projections spaced from its ends, and three spaced cam followers on the other frame movable in the cam tracks and guiding the frames during relative turning movement, the ends of the reverse loops and of the track projections being formed with parallel locking portions into which two of the cam followers are moved when the frames are parallel to limit relative turning of the frames.

5. A seat comprising a base frame adapted to be secured to a floor, a seat frame movably supported on the base frame, cam tracks formed in one of the frames including three arcuate portions arranged in the form of a triangle and having in spaced parts of the track parallel locking portions extending longitudinally of said one of the frames, and three spaced cam followers movable in the tracks to guide the frames for relative rotation, two of the cam followers being moved into the locking portions of the tracks by relative lengthwise movement of the frames when they are parallel to lock the frames against rotation.

6. A seat comprising a base frame adapted to be secured to a floor, a seat frame movably supported on the base frame, cam tracks formed in one of the frames including three arcuate portions arranged in the form of a triangle and having in spaced parts of the track parallel locking portions extending longitudinally of said one of the frames, locking means on the ends of the frames interengaged by relative lengthwise movement of the frames to hold them against relative rotation, and spaced cam followers on the other frame movable in the tracks to guide the frames during relative turning, the cam followers being moved into the locking portion of the tracks by the relative lengthwise movement of the frames which interengages the locking means.

7. A seat comprising a base frame adapted to be secured to a floor, a seat frame movably supported on the base frame, one of the frames being formed with an arcuate cam slot terminating in reverse loops at its ends, a pair of spaced cam follower pins on the other frame movable in the slot and loops, cam track means on one of the frames including a pair of arcuate portions joining at one end at an acute angle, and a follower pin on the other of the frames movable in the cam track means.

8. A seat comprising a base frame adapted to be secured on a floor, a seat frame movably supported on the base frame, one of the frames being formed with an arcuate cam slot terminating in reverse loops at its ends, a pair of spaced cam follower pins on the other frame movable in the slot and loops, there being short slot extensions projecting from the arcuate slot at angles

away from the loop portions to receive one of the pair of follower pins when the other is in one of the loops, a pair of arcuate cam tracks on said one of the frames forming a triangle with the cam slot, and a third follower pin on the other frame movable in the pair of cam tracks.

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