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(54) **VEHICLE SEAT AND SPLIT CONSOLE ASSEMBLY**

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(57) **ABSTRACT**

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A vehicle seat assembly comprises a base; a seat mounted to swivel relative to the base; and a console having first and second segments, the first segment mounted to swivel with the seat relative to the base and the second segment being mounted to remain in fixed position as the seat and first console segment swivel. The console's two segments lie in a generally common horizontal plane and are separated by an arcuate spacing so that the first segment is located proximate the operator and the second segment is located distally of the operator. This arrangement of the seat assembly components allows the seated operator to rotate in the seat through a substantial arc, with the first console segment rotating as well while the second console segment remains stationary.

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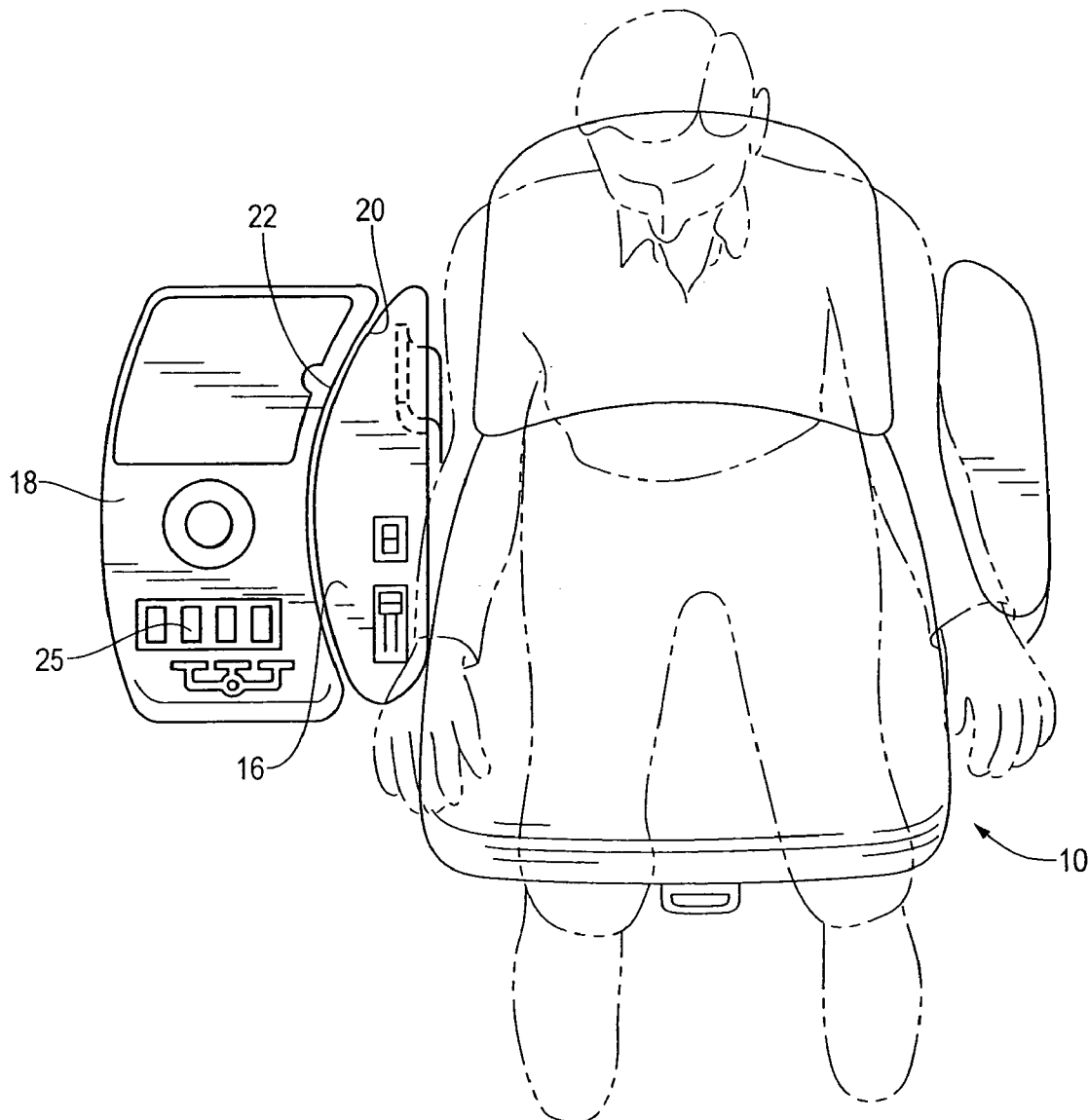


Fig. 1

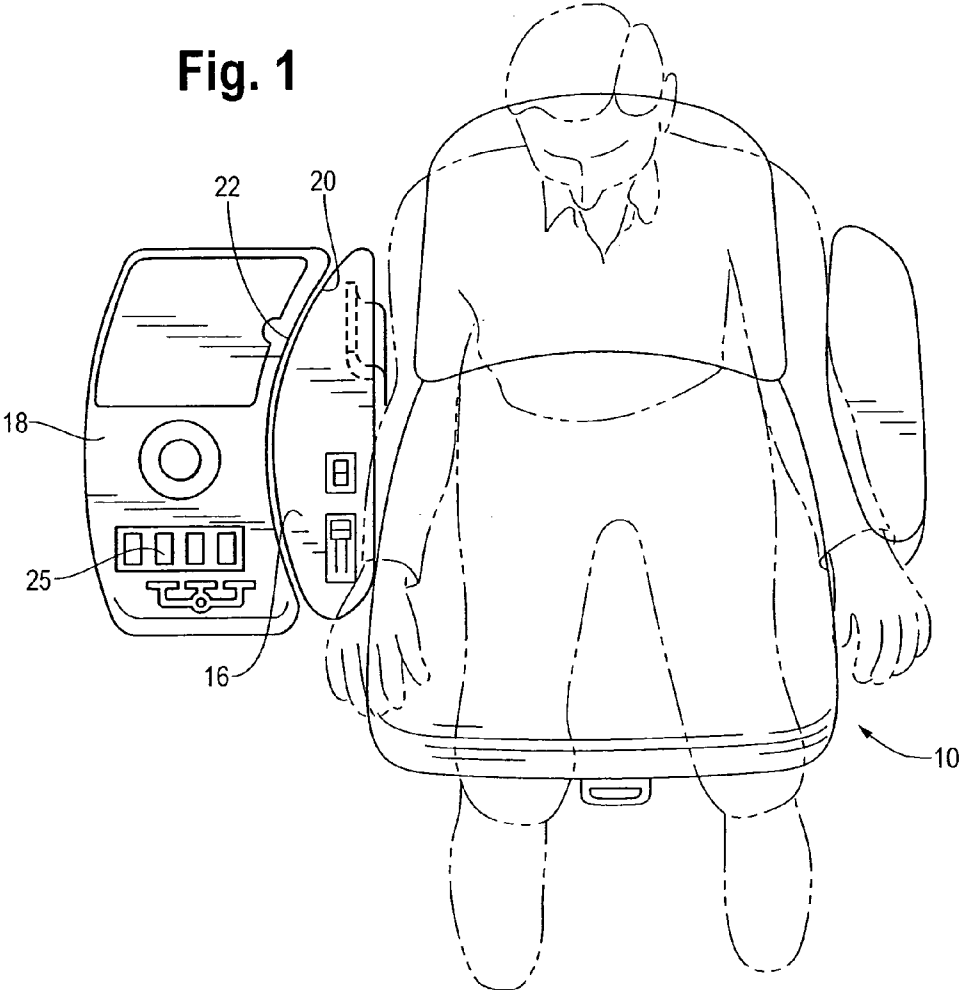


Fig. 2

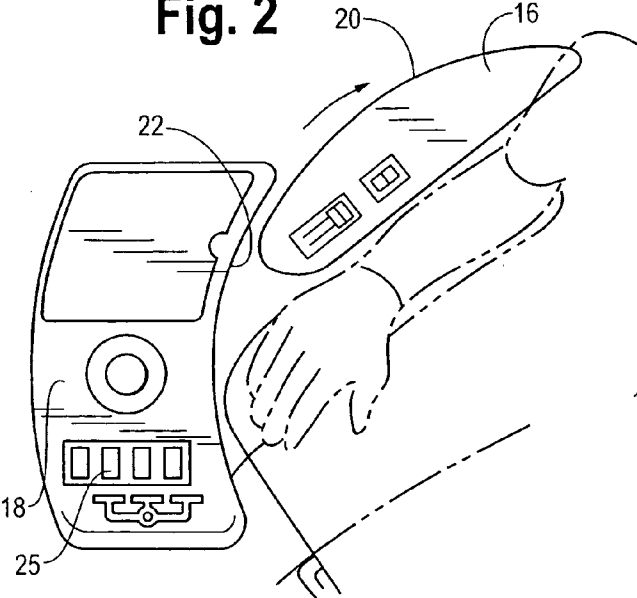
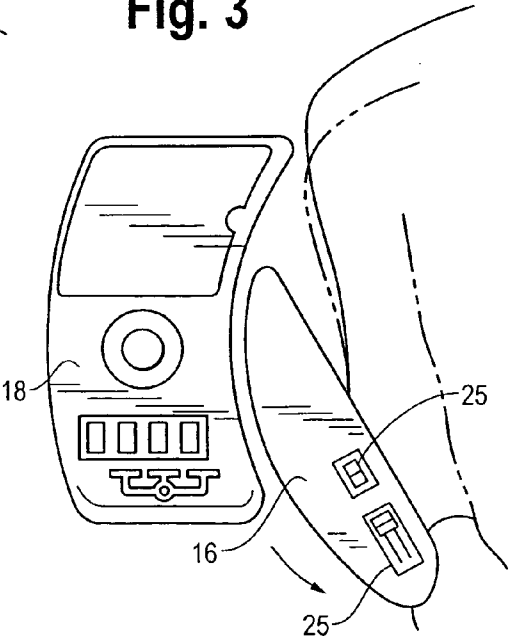


Fig. 3



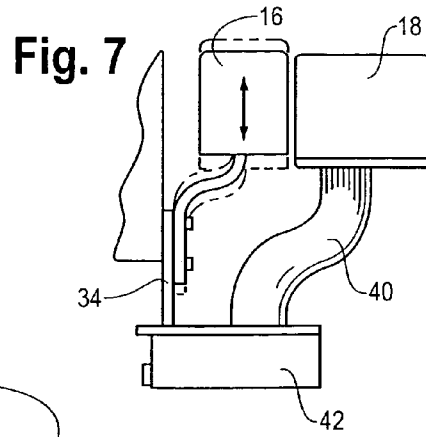
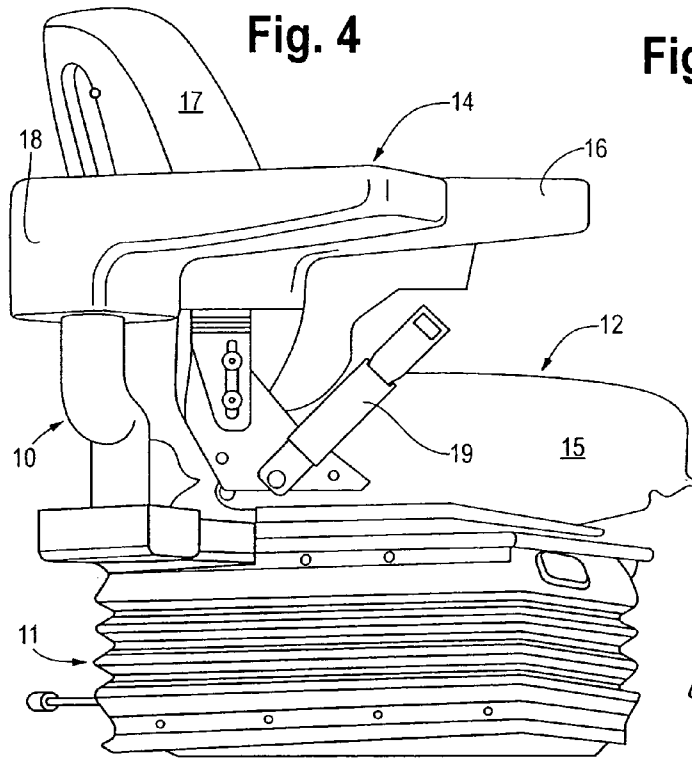


Fig. 5

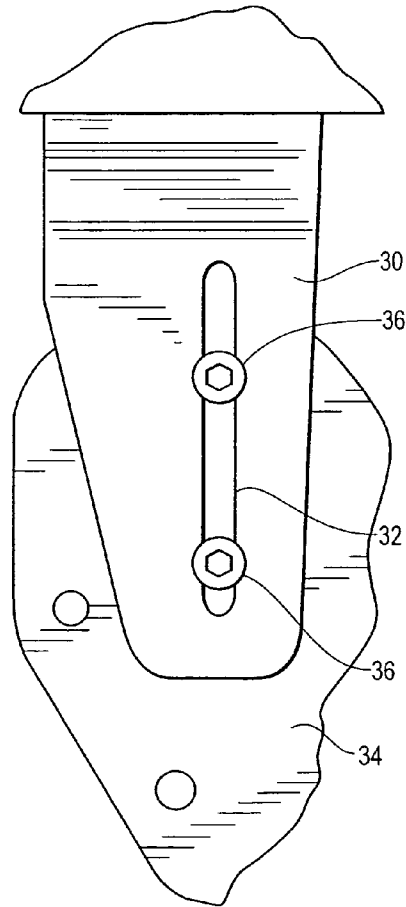


Fig. 6

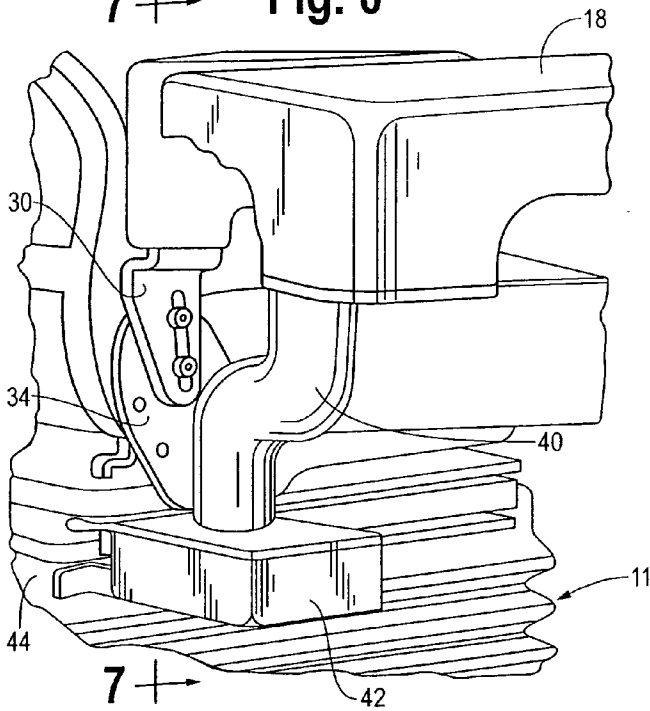


Fig. 8

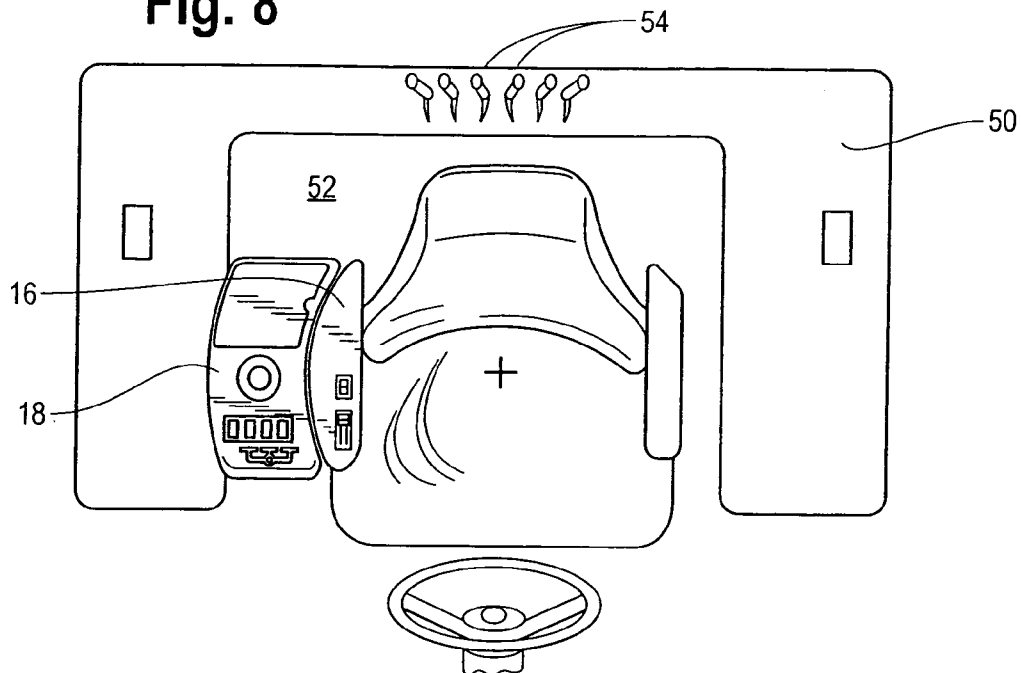
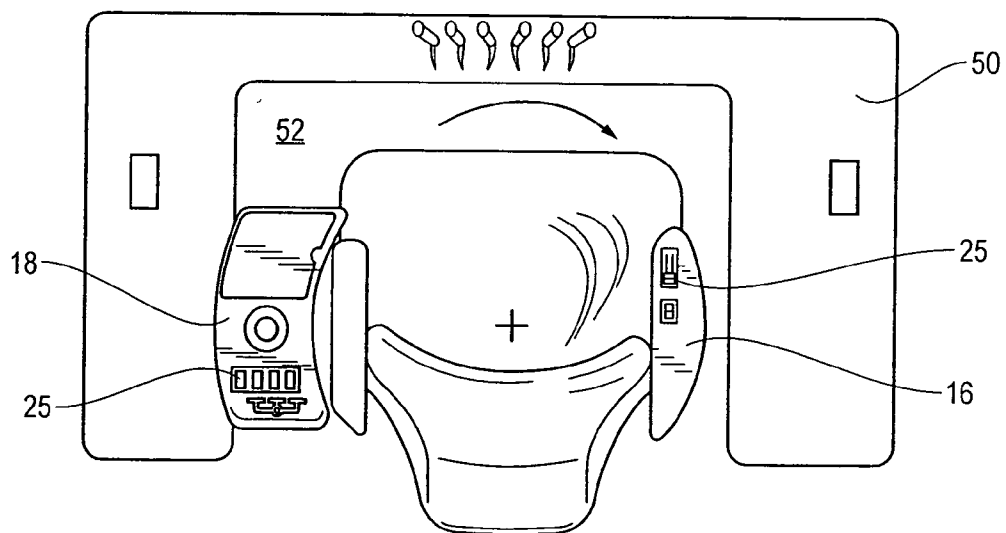


Fig. 9



VEHICLE SEAT AND SPLIT CONSOLE ASSEMBLY

BACKGROUND OF THE INVENTION

[0001] The present invention relates to vehicle seating and, more particularly to a seat assembly useful in circumstances where the operator of the vehicle is desirably able to swivel in the operator seat to facilitate viewing behind the vehicle. The invention finds particularly advantageous application in seat assemblies that include a console associated with the operator's seat which houses various instruments useful in the operation of the vehicle.

[0002] It has been known for many years in the vehicle arts, and particularly in the field of agricultural and off the road construction equipment, to provide a console associated with the operator's seat which houses various vehicle instruments. Oftentimes these consoles are extensions of the right hand armrest and may include throttle, breaking and gear shift controls. Examples of such prior art armrest consoles are disclosed in U.S. Pat. Nos. 4,392,546; 5,566,778; 5,924,515 and 6,039,141. As vehicles have become more complex over time, the number of instruments or controls suitably positioned within the console has increased in number. As a result, the size of the console has increased.

[0003] Another seat assembly feature that has become increasingly important is the ability of the seat to swivel, giving the operator a better view of the vehicle's surroundings and particularly the area behind the vehicle. Therefore, it is now desirable to afford the operator the maximum amount of swivel possible.

[0004] The use of larger consoles has complicated the problem of increasing the swivel capabilities of the seat assembly (and particularly with respect to clockwise rotation of the seat which is most desired). Since the larger consoles effectively increase the "swing radius" of the seat assembly, the range of seat swivel is limited due to the console's contact with other stationary components of the vehicle cab.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] The novel features which are characteristic of the present invention are set forth in the appended claims. However, the invention's preferred embodiments, together with further objects and attendant advantages, will be best understood by reference to the following detailed description taken in connection with the accompanying drawings in which:

[0006] FIG. 1 is a plan view showing one embodiment of the present invention with a vehicle operator illustrated in phantom lines:

[0007] FIGS. 1A and 2A are partial plan views showing differing positions of the console segments relative to one another in the practice of the embodiment of FIG. 1;

[0008] FIG. 2 is a perspective side view illustrating further structural details of the embodiment of FIG. 1;

[0009] FIG. 3 is a partial side view showing details for mounting the first console segment;

[0010] FIG. 4 is a partial side perspective view showing further details for mounting the console segments:

[0011] FIG. 5 is a partial rear view taken along line 5-5 of FIG. 4: and

[0012] FIGS. 6A and 6B show different orientations of the seat and the console segments of the FIG. 1 embodiment as positioned within a vehicle cab compartment.

SUMMARY OF THE INVENTION

[0013] The present invention is directed to a vehicle seat assembly, comprising a base; a seat mounted to swivel relative to the base; and a console having first and second segments, the first segment being mounted to swivel with the seat relative to the base and the second segment being mounted to remain in fixed position as the seat and first console segment swivel.

[0014] The console's two segments may have upper surfaces that lie in a generally common horizontal plane; they are also preferably separated by an arcuate spacing. This arrangement of the seat assembly components allows the seated operator to rotate in the seat through a substantial arc, with the first console segment rotating as well while the second console segment remains stationary.

[0015] A significant advantage obtained through the use of the present invention is that a large console may be employed while giving the operator a maximum degree of rotation in the vehicle seat, and this can be achieved even when the vehicle's cab space is relatively small.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0016] With reference to FIGS. 1 and 2, a vehicle seat assembly is designated generally as 10 and includes base 11, seat 12 and console 14. The base is conventional and may include a variety of well known seat suspension components such as fore/aft and lateral isolators, air or mechanical springs, shock absorbers, and fore/aft and height adjustment devices. In addition, the base includes a swivel assembly to permit the seat to rotate in a horizontal plane relative to the base. Again, such swivel assemblies are well known to those of skill in the art and need not be described here. The seat 12 is also entirely conventional, having seat and backrest cushions, 15 and 17 respectively, and an operator restraint such as seat belt 19. The console 14 comprises first and second segments, 14 and 16 respectively, the first segment being located proximate the operator with the second segment being located distally of the operator. The first console segment may have an outer perimeter 20 with an arcuate configuration, with the second segment having a complimentary inner arcuate perimeter 22, so that the two segments are aligned but spaced slightly from one another when the seat assembly is positioned so the operator faces forwardly in the vehicle as shown in FIG. 1. Each of the console segments, 14 and 16, may house or mount one or more of a plurality of vehicle instruments or controls 25, all well known to those of skill in the art. Alternatively, all of the instruments 25 may be mounted to one or the other of the two console segments. Preferably, the two segments have upper surfaces that lie generally in a common horizontal plane. As illustrated in FIGS. 1A and 2A, the first console segment 14 will swivel with the seat in either a clockwise or counter clockwise direction, while the second console segment 16 remains generally stationary.

[0017] FIGS. 2-5 show further construction details for the mounting of the console segments in accordance with the preferred embodiment. In order to achieve the desired functionality of the present invention, it is necessary that the first console segment be mounted to the seat assembly at or above

the upper or rotating component of the swivel sub assembly and the second console segment be mounted at or below the lower or stationary component of the swivel sub assembly. As illustrated in the preferred embodiment, the first console segment 14 is mounted to a support bracket 30 having an elongated slot 32. In turn, support bracket 30 may be mounted to a conventional seat side bracket 34 by means of bolts 36 positioned in slot 34. In this way, the first console segment 14 may be adjusted vertically relative to the second console bracket 16 as illustrated in FIG. 5. The second console segment 16 is mounted to a support arm 40 and support bracket 42, with the support bracket 42 mounted, in turn, to the base 11 at the lower plate 44 of the swivel sub assembly.

[0018] As shown in FIGS. 6A and 6B, the seat assembly of the present invention is advantageously used in a vehicle having a cab 50 defining a cab compartment 52. FIG. 6A shows the seat facing forward, and FIG. 6b shows the seat rotated 180 degrees and facing rearward. In each situation the second console segment remains in the same position, but the first console segment rotates with the seat and the operator. Because the radial extent of the seat and first console is relatively small, the full rotation of the seat is possible, even in a relatively small cab compartment, without having the cab walls interfere with the rotating structures. In the illustrated embodiment, there are vehicle control instruments 54 positioned at the rear of the cab, but these same instruments may be located on the first console segment as well.

[0019] It will be appreciated by those skilled in the art that various changes and modifications can be made to the illustrated embodiments without departing from the spirit of the present invention. All such modifications and changes are intended to be covered by the appended claims.

We claim:

1. A vehicle seat assembly, comprising:
 - a base;
 - a seat mounted to swivel relative to the base;
 - a console having first and second segments, the first segment mounted to swivel with the seat relative to the base

and the second segment being mounted to remain in fixed position as the seat and first console segment swivel.

2. The vehicle seat assembly of claim 1 wherein the first and second console segments have upper surfaces positioned generally in a common horizontal plane.

3. The vehicle seat assembly of claim 1 wherein the first console segment has an arcuate outer perimeter and the second console segment has an arcuate inner perimeter positioned adjacent said outer perimeter.

4. The vehicle seat assembly of claim 1 wherein said base includes a fore and aft isolator subassembly to permit the seat to move forward and rearward relative the vehicle, and said first and second console segments are mounted to move forward and rearward with the seat.

5. The vehicle seat assembly wherein a plurality of instruments for operating the vehicle are mounted on the console.

6. The vehicle seat assembly of claim 5 wherein the plurality of instruments are mounted only on the first console segment.

7. The vehicle seat assembly of claim 5 wherein the plurality of instruments are mounted only on the second console segment.

8. The vehicle seat assembly of claim 5 wherein at least one of the plurality of instruments is mounted on each of the console segments.

9. The vehicle seat assembly of claim 1 wherein the seat and first console segment have a rotational travel of at least 180 degrees relative to said base.

10. The vehicle seat assembly of claim 1 where wherein the base includes a fore and aft isolator subassembly supporting a swivel subassembly, the fore and aft subassembly having lower and upper isolator members, and the swivel subassembly having lower and upper swivel members; and wherein the seat and first console segment are mounted to the upper swivel member and the second console segment is mounted to the upper isolator member.

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