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(54) **SEAT BELT BUCKLE RECEPTACLE  
PRESENTER ASSEMBLY**

**Related U.S. Application Data**

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(57) **ABSTRACT**

A seat belt buckle receptacle presenter is disclosed that presents the seat belt buckle receptacle to a vehicle occupant in a convenient and visually accessible location. In a first preferred embodiment, the seat belt receptacle is pivotally mounted along a generally horizontal track to move from a storage position located in the rearward portion of a vehicle seat to a presenting position located adjacent a forward edge of the vehicle seat. An alternative second preferred embodiment includes an upwardly extending presenting arm that is connected to a conventional restraint belt receptacle. The presenting arm receives a seat belt buckle and delivers the belt buckle to the seat belt receptacle.

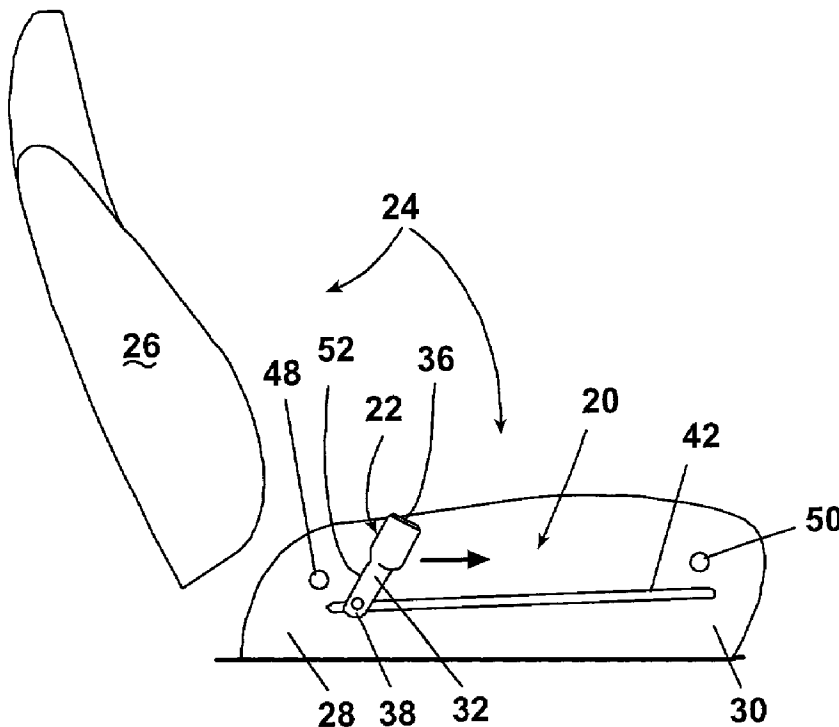
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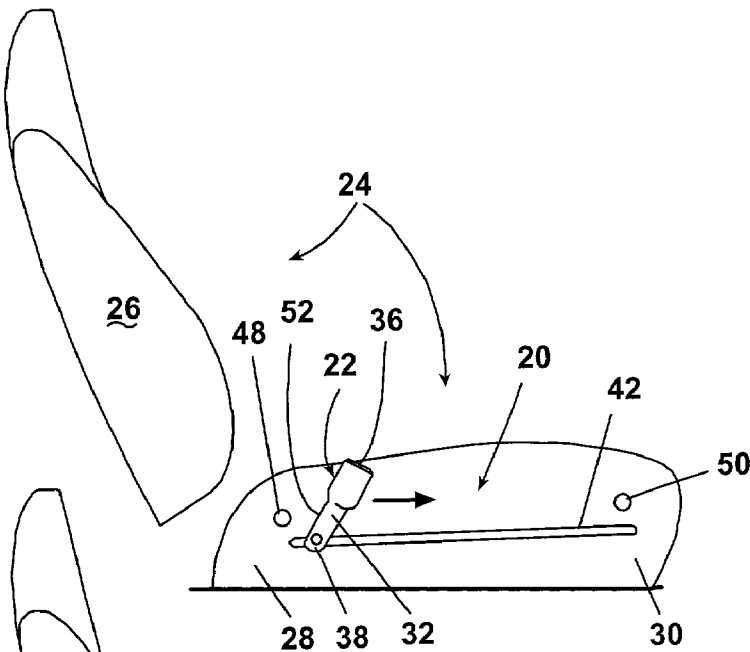


Fig. 1

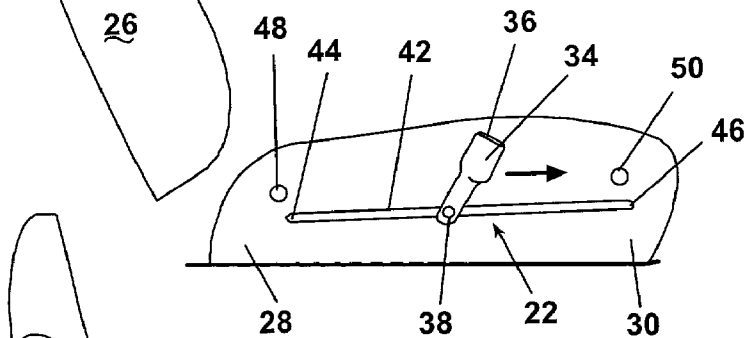


Fig. 2

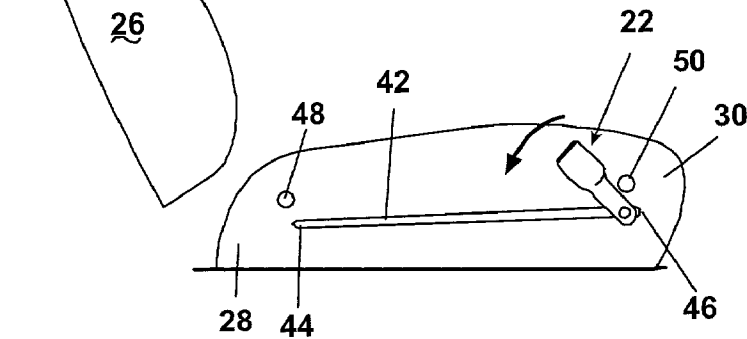
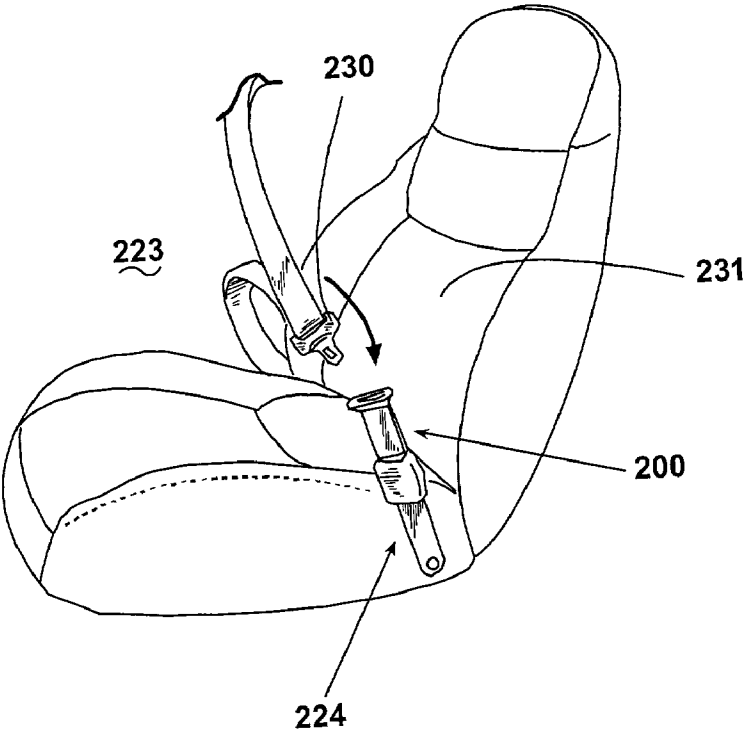
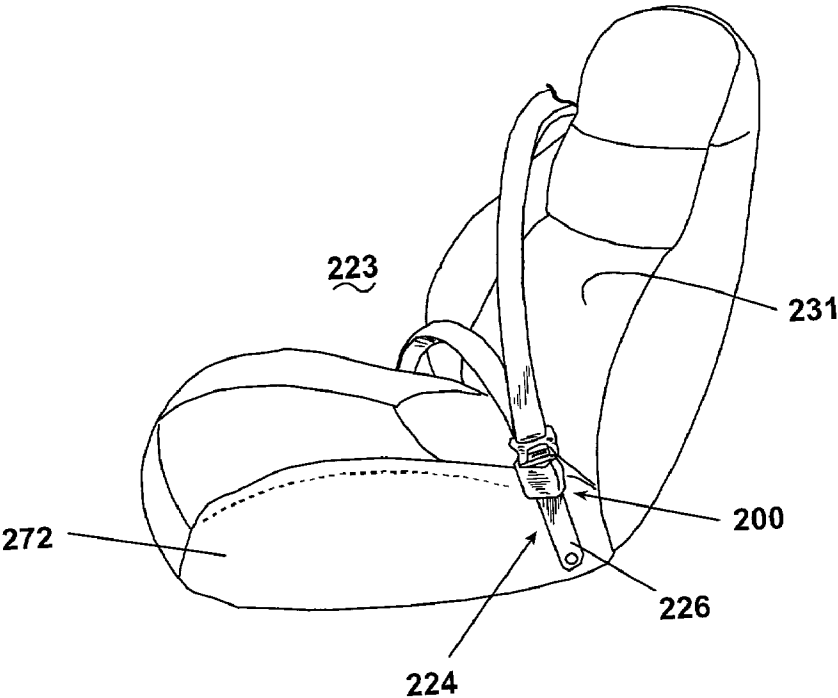


Fig. 3



**Fig. 4**



**Fig. 5**

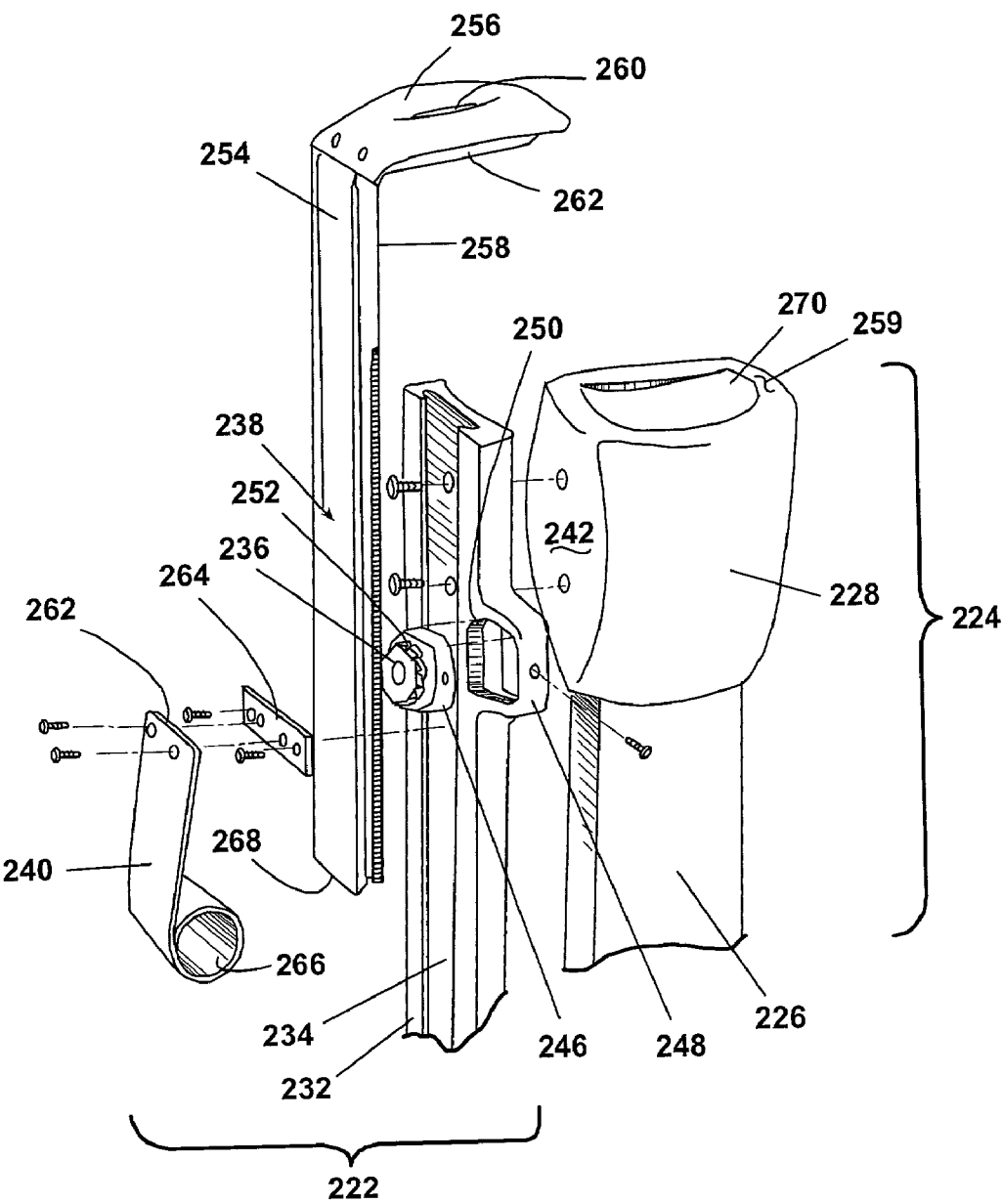


Fig. 6

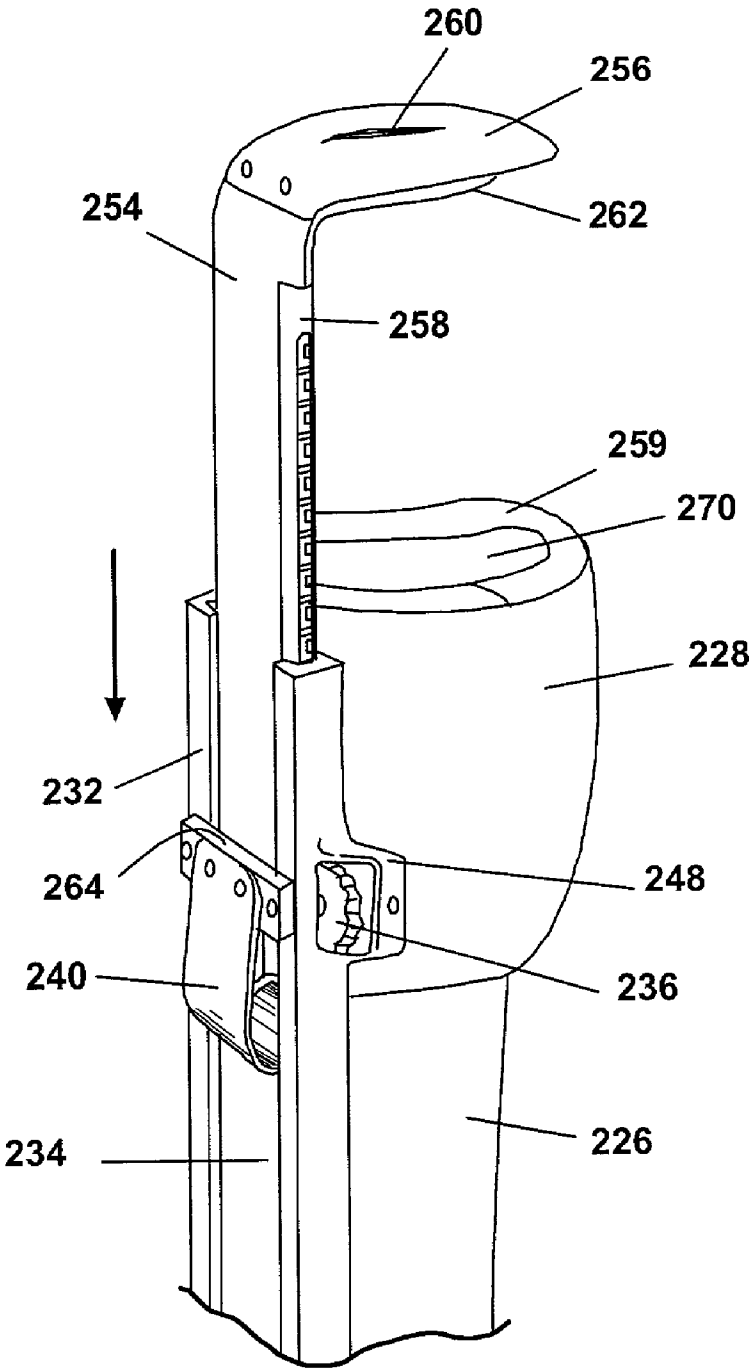
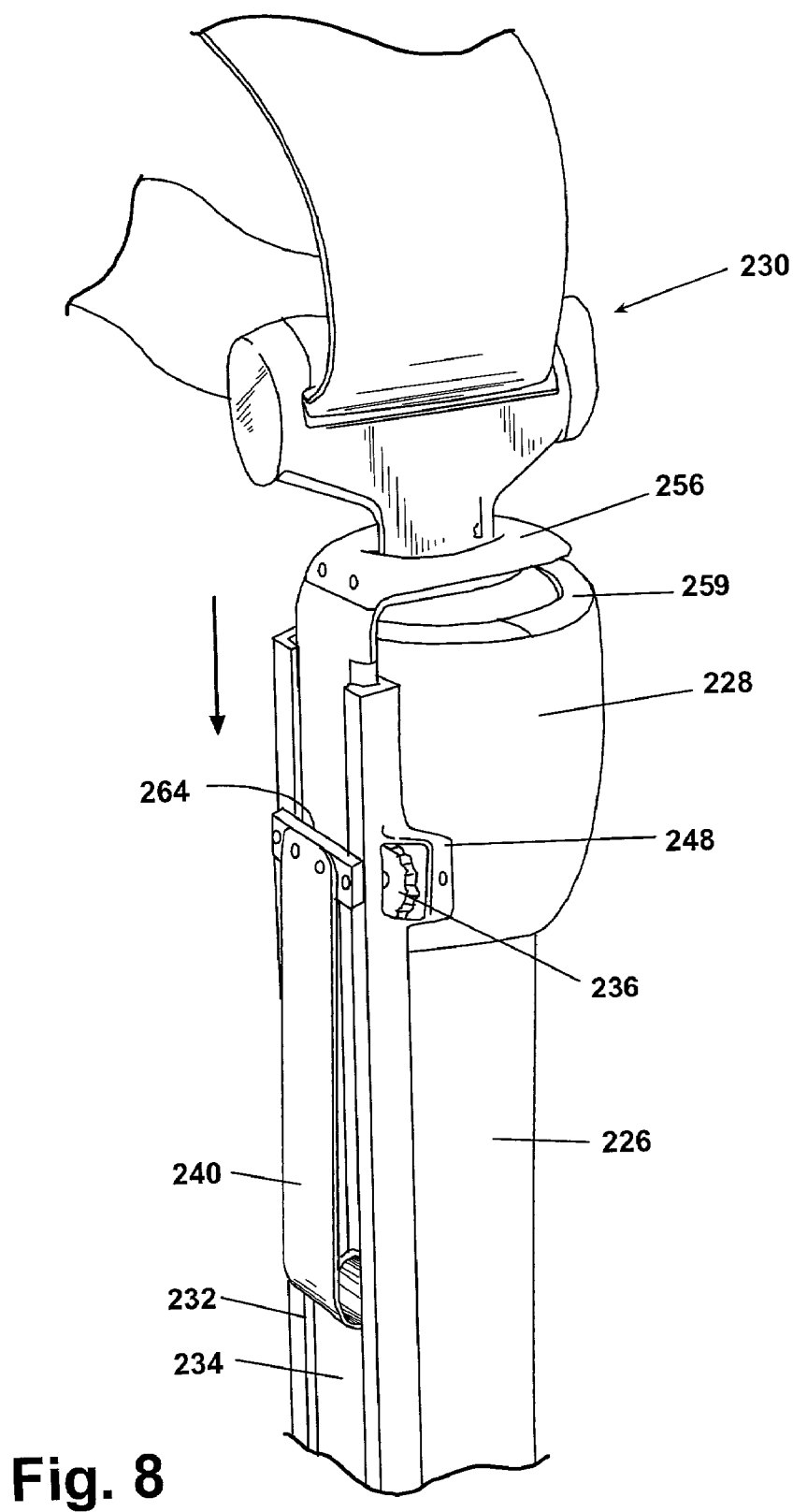


Fig. 7



## SEAT BELT BUCKLE RECEPTACLE PRESENTER ASSEMBLY

### RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Application Serial No. 60/197,956 filed Apr. 17, 2000 entitled "SEAT BELT BUCKLE RECEPTACLE PRESENTER ASSEMBLY", hereby incorporated by reference in its entirety.

### TECHNICAL FIELD

[0002] The invention relates to a seat belt buckle assembly, and more particularly to a seat belt buckle receptacle assembly that has a selectively extendable buckle receptacle that moves within easy reach of a vehicle occupant to facilitate engagement with a seat belt buckle.

### BACKGROUND OF THE INVENTION

[0003] The use of restraint belts in vehicles is known for providing vehicle occupants with protection in the event of a collision or accident. Conventional restraint belts include a combination of a lap belt portion and shoulder belt portion formed from a continuous belt. In such an arrangement, one end of the belt is anchored to a structural floor member of the vehicle behind a seat on its outboard side. The other end is secured to a retracting mechanism mounted on or in the 'B' pillar rearward from the vehicle door, the outboard edge of the ceiling or floor, or in the seat back. A buckle for engaging with a receptacle positioned adjacent to the inboard side of the vehicle seat, is usually slidably attached to the belt. When not in use, the retracting mechanism biases the belt and buckle toward the outboard side of the vehicle. Sometimes a second retractor is added which separately attaches to the lap portion of the belt and the floor or lower seat, again on the outboard side.

[0004] To secure a restraint belt, the vehicle occupant typically must first twist around the seat and reach across their body to try and grab the buckle that is located above, behind the seat or alongside the seat back. Next, the occupant must draw the buckle and belt across his body such that the shoulder belt portion extends from the retracting mechanism diagonally across the occupant's chest while the lap belt portion is directed across the occupant's lap. Finally, the occupant must twist around the opposite direction towards the center of the vehicle to find the seat belt receptacle and releasably secure the buckle in the receptacle. Buckling into such prior art restraint systems is an undesirable chore. It is awkward for an occupant to twist around and secure a buckle in the buckle receptacle. Thus, statistics have shown that people will often forget or forego using such prior art restraint systems.

[0005] To overcome the problems associated with conventional restraints systems, another type of restraint system known as a "passive" restraint system has been developed. One such passive restraint system uses separate lap and shoulder belts. The lap belt is of a conventional design wherein a retracting mechanism is positioned adjacent to the seat on its outboard side. The shoulder belt has one end attached to the inside of the upper rear corner of the vehicle door. The other end is engaged with a separate retracting mechanism adjacent to the inboard side of the seat. When the vehicle door is opened, the belt extends from the inboard

side of the seat away from the seat to the outer corner of the vehicle door, so as to enable the vehicle occupant to enter the vehicle between the shoulder belt and the seat. Once the door is pulled shut, the inboard end of the shoulder belt retracts, thereby securing the shoulder belt around the vehicle occupant. However, the lap belt must still be separately secured across the occupant's lap. Moreover, the positioning of the shoulder belt reduces the available room in which the vehicle occupant may enter and exit the vehicle, thus hindering entry and exit of the vehicle.

[0006] To provide more room to enter and exit the vehicle, another known type of passive restraint system has the outboard end of the shoulder belt attached to a movable shuttle riding in a track along the upper periphery of the door opening. When the door is opened, the shuttle automatically moves the outboard end of the shoulder belt forward along the track. More room is provided for the occupant to enter and exit the vehicle without becoming inadvertently entangled in the shoulder belt. Again, however, the lap belt still must be separately and manually fastened across the occupant's lap in the conventional manner such that the occupant must twist around to locate and secure the lap belt.

[0007] Therefore, there exists a need for a buckle receptacle assembly that is presented to a vehicle occupant so as to be easily accessible and within the vehicle occupant's sight of vision to eliminate the need for twisting around to locate the buckle receptacle.

### SUMMARY OF THE INVENTION

[0008] The present invention is directed to a seat belt buckle receptacle assembly for a vehicle seat that presents a seat belt buckle receptacle to a vehicle occupant in a conveniently accessible location. A first preferred embodiment of the seat belt buckle assembly includes a selectively movable arm that carries a buckle receptacle. The movable arm moves between a storage position and a presenting position in a sliding manner. The arm is pivotally attached to a first end of an extension member that extends outwardly from a slot formed in the vehicle seat. A second end of the extension member is operatively connected to a motor driven track positioned within the vehicle seat. Alternatively, the track mechanism may be positioned adjacent to the vehicle seat.

[0009] The slot has first and second distal ends. Positioned adjacent to the first distal end is a rear pivot stop. Rear pivot stop is fixedly connected to a structural component of the rear portion of the vehicle seat. A forward pivot stop is fixedly connected to a structural component of a forward portion of the vehicle seat adjacent the second distal end of the slot. The rear and forward pivot stops cooperate with the movable arm to position the buckle receptacle at a predetermined angle.

[0010] In operation, the seat belt buckle receptacle assembly is initially in the storage position at the first distal end of the slot with the movable arm being positioned at the rear portion of the vehicle seat and the arm positioned at approximately a 45° angle. The buckle receptacle is oriented toward the forward portion of the vehicle seat and rests against the rear pivot stop. Next, a central processing unit operates to initiate the operation of the motor driven track mechanism to move the arm supporting the buckle receptacle forward toward the second distal end of the slot and into contact with

the forward pivot stop. Once the movable arm contacts the forward pivot stop, the arm pivots about the extension member in a counterclockwise direction until reaching a predetermined presenting angle such that the buckle receptacle is facing the vehicle occupant. Preferably, the presenting angle is approximately 45°. Upon inserting a buckle into the buckle receptacle, the central processing unit directs the movable arm to return to the storage position at the rear of the vehicle seat. As the movable arm comes into contact with the rear pivot stop, the movable arm rotates about the extension member in a clockwise direction, back to the initial storage position. Upon shut off of the vehicle engine, it is preferred that the central processing unit automatically returns the movable arm to the presenting position where the seat belt buckle may be de-latched. Further, upon de-latching it is preferred that the seat belt buckle receptacle assembly is returned back to the storage position.

[0011] In accordance with another aspect of the invention, in an alternative preferred embodiment, a seat belt buckle receptacle assembly includes a selectively upwardly extending arm that is movable between a presenting position and an engagement position in a telescoping manner. The upwardly extending arm operates to deliver a seat belt buckle to a buckle receptacle.

[0012] The alternative buckle receptacle assembly includes a conventional seat belt buckle receptacle portion for receiving a conventional seat belt buckle that is fixedly secured to a side surface of a vehicle seat. Preferably, the seat belt buckle receptacle portion is oriented at a predetermined angle, approximately 45°, so as to face away from the rear of the vehicle seat. A selectively movable arm mechanism is mounted to the conventional buckle receptacle portion. The arm mechanism includes a track having a groove therein, a rotary damper, a presenting arm having a mouth portion with an opening therein, and a coil spring. The track is fixedly connected to the seat belt receptacle. The presenting arm is movable mounted within the groove of the track. In accordance with one aspect of the invention, the presenting arm further includes a toothed outer edge.

[0013] The rotary damper is rotatably mounted on a plate that is fixedly connected to a mounting portion of the track. The rotary damper further includes teeth members on its periphery that cooperates and mates with the toothed outer edge formed on the presenting arm to facilitate movement of the presenting arm. A lip portion of the coil spring is fixedly secured to a mounting bracket that is mounted across the track and over the presenting arm. The coiled portion of the coil spring is mounted within the groove of the track, beneath the presenting arm to bias the presenting arm into the presenting position. The rotary damper serves to slow the biasing force of the coil spring.

[0014] In operation, the arm assembly is biased into the presenting position such that the presenting arm is extended upwardly with the mouth portion being spaced away from the conventional seat belt buckle receptacle. Because the mouth portion is positioned upwardly from the receptacle portion and in easy view of the vehicle occupant, a vehicle occupant is able to easily engage a buckle with an opening in the mouth portion. Once the buckle is received in the opening of the mouth portion, the vehicle occupant may manually push the mouth portion downward toward the buckle receptacle until the mouth portion is positioned

directly over the top of the receptacle. The opening of the mouth portion is aligned with the buckle receptacle such that the buckle is received within the buckle receptacle and secured by a conventional latch within the buckle, thereby securing the presenting arm in the engaged position. Alternatively, the coil spring may be eliminated and a rotary damper may be connected to a motor that is controlled by a central processing unit to deliver the buckle and presenting arm to the seat belt buckle receptacle.

[0015] To remove the buckle from the receptacle, it is preferred that once the vehicle engine is turned off, the central processing unit operates a solenoid to automatically de-latch the buckle from the receptacle portion. The teeth of the rotary damper cooperates with teeth on the outer edge of the presenting arm and the biasing force of the coil spring to return the presenting arm to the presenting position. A latch in the mouth portion may be depressed to release the buckle.

[0016] Alternatively, after the buckle is de-latched, the presenting arm of the seat belt buckle receptacle assembly may be returned to the engaged position such that the mouth portion is resting on top of the buckle receptacle with the opening in the mouth portion generally aligned with the buckle opening in the buckle receptacle and secured by a latch mechanism. In accordance with this aspect of the invention, the presenting arm may be returned to the presenting position by the coil spring after de-latching the mouth portion. Alternatively, the rotary damper may be activated by a central processing unit and rotated a predetermined direction to move the presenting arm upwardly along the track into the presenting position once the vehicle door is closed. Once the presenting arm reaches the presenting position, approximately 4-8 inches from the buckle receptacle, the central processing unit turns off the motor driving the rotary damper.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0017] The features and inventive aspects of the present invention will become more apparent upon reading the following detailed description, claims, and drawings, of which the following is a brief description:

[0018] FIG. 1 shows a first embodiment of the present invention having a sliding seat belt buckle receptacle presenter assembly with the seat belt buckle receptacle in a storage position.

[0019] FIG. 2 shows the sliding seat belt buckle receptacle presenter of FIG. 1 moving into a presenting position.

[0020] FIG. 3 shows the sliding seat belt buckle receptacle presenter of FIG. 1 in the presenting position.

[0021] FIG. 4 shows a second embodiment of the present invention having a telescoping extendable seat belt buckle receptacle assembly in a presenting position.

[0022] FIG. 5 shows the telescoping extendable seat belt buckle receptacle in an engaged position with a belt buckle engaged with a seat belt buckle receptacle.

[0023] FIG. 6 shows an exploded view of the telescoping extendable seat belt buckle receptacle assembly of FIG. 4.

[0024] FIG. 7 is a perspective view of the telescoping extendable seat belt buckle receptacle assembly in the presenting position.



[0025] FIG. 8 is a perspective view of the telescoping extendable seat belt buckle receptacle assembly in the engaged position.

#### DETAILED DESCRIPTION OF THE DRAWINGS

[0026] FIGS. 1-3 disclose a first preferred embodiment of a seat belt buckle receptacle presenter assembly 20 that includes a pivotally mounted seat belt buckle receptacle 22 that selectively receives a seat belt buckle (not shown). Seat belt buckle receptacle 22 is positioned adjacent to a vehicle seat 24 and is movable from a storage position (FIG. 1), to a presenting position (FIG. 3). The storage position is defined by seat belt buckle receptacle 22 being positioned adjacent vehicle seat back 26 towards a rear portion 28 of vehicle seat 24. The presenting position is defined by seat belt buckle receptacle 22 being positioned adjacent a front portion 30 of vehicle seat 24 such that seat belt buckle receptacle 22 is positioned within sight of and within easy reach of a vehicle seat occupant. Seat belt receptacle 22 includes a pivotal arm 32 that carries a conventional receptacle portion 34 having an opening 36 therein.

[0027] Assembly 20 uses a motor-driven slider mechanism that preferably includes a movable arm 38 that moves along a track to move seat belt receptacle 22 from the storage position to the presenting position. Preferably, the slider mechanism is mounted within vehicle seat 24 for ease of packaging and aesthetic appearance. Alternatively, assembly 20 may be mounted adjacent to vehicle seat 24, either inboard or outboard of vehicle seat 24.

[0028] In the preferred embodiment, movable arm 38 has first and second ends. First end 40 is pivotally connected to pivotal arm 32. Second end (not shown) extends into a generally planar slot 42 formed in vehicle seat 24 that defines the presenting path of the seat belt buckle receptacle and operatively connects to the track. Alternatively, slot 42 may be formed so as to curve upwardly toward front portion 30 of vehicle seat 24. Movable arm 38 is pivotally mounted to pivotal arm 30 such that seat belt buckle receptacle 22 may be pivoted into a predetermined position.

[0029] Slot 42 has first and second distal ends 44 and 46. Positioned adjacent first distal end 44 is a rear pivot stop 48. Rear pivot stop 48 is fixedly connected, preferably by a bolt assembly or other suitable mechanism, to a structural component of vehicle seat 24. Positioned adjacent second distal end 46 is a forward pivot stop 50. Forward pivot stop 50 is fixedly connected, preferably by a bolt assembly or other suitable mechanism, to a structural component of vehicle seat 24. The rear and forward pivot stops 48 and 50 cooperate with pivotal arm 32 to position seat belt buckle receptacle 22 at a predetermined angle.

[0030] In operation, seat belt receptacle 22 is initially in the storage position with rear pivot stop 40 contacting a rearward edge 52 of pivotal arm 30 and positioning seat belt receptacle 22 at a starting angle such that opening 36 faces outwardly and away from vehicle seat back 26. Preferably, the starting angle is approximately 45°. A central processing unit initiates the operation of the motor driven slidable track mechanism to which movable arm 38 is operatively connected. Movable arm 38, in turn, moves seat belt buckle receptacle 22 forward toward second distal end 46 of slot 42 until pivotal arm 32 comes into contact with forward pivot stop 50. Once pivotal arm 32 contacts forward pivot stop 50,

pivotal arm 32 pivots about the first end of movable arm 38 in a counterclockwise direction until reaching a predetermined presenting angle. Preferably the angle is approximately 45° such that opening 36 is facing upwardly and toward vehicle seat back 26 so as to be facing the vehicle occupant and permitting ease of use. Upon inserting a seat belt buckle into opening 36 of receptacle portion 34, the central processing unit directs the track and movable arm 38 to return seat belt buckle receptacle 22 along slot 42 to the storage position. As pivot arm 32 comes into contact with rear pivot stop 48, pivot arm 30 rotates about the first end of movable arm 38 in a clockwise direction until it reaches the predetermined storage angle. Once seat belt buckle receptacle 22 reaches rear pivot stop 40, the central processing unit locks seat belt buckle receptacle 22 into the storage position. Upon shut off of the vehicle engine, it is preferred that the central processing unit automatically returns movable arm 38 to the presenting position where the seat belt buckle may be de-latched. Further, upon de-latching it is preferred that seat belt buckle receptacle assembly 20 is returned back to the storage position.

[0031] It is preferred that seat belt buckle receptacle assembly 20 is used in combination with a seat belt presentation mechanism (not shown) that delivers the seat belt to forward edge 30 of vehicle seat 24 on the opposite side of vehicle seat 24 that assembly 20 is positioned. Examples of such seat belt presentation mechanisms are shown in U.S. co-pending patent application Ser. No. 09/169,070. It is further preferred that the central processing unit operates both the seat belt presentation mechanism and seat belt receptacle assembly 20 such that both operate simultaneously.

[0032] FIGS. 4-8 disclose an alternative preferred embodiment of a seat belt buckle receptacle assembly 200 having a selectively upwardly extending presenting arm assembly 222 that is movable between a presenting position (FIGS. 4 and 7) and an engagement position (FIGS. 5 and 8). Assembly 200 includes a conventional seat belt buckle receptacle 224 that is fixedly secured to a vehicle seat 223 and having a supporting arm 226 carrying a conventional receptacle portion 228 for selectively receiving a seat belt buckle 230 (FIGS. 4 and 5). Preferably, buckle receptacle 224 is oriented at a predetermined angle in the range of 30° to 90°, and more preferably approximately 45° such that the top of seat belt buckle receptacle 224 is facing outwardly and away from vehicle seat back 231.

[0033] Presenting arm assembly 222 (best seen in FIGS. 6-8) includes a track 232 having a groove 234 therein, a rotary damper 236, a presenting arm 238, and a coil spring 240. Track 232 is fixedly connected to a side surface 242 of receptacle portion 228 of seat belt buckle receptacle 224, preferably by bolts or other suitable fasteners. Rotary damper 236 is rotatably mounted on a plate 246 that is fixedly connected to a mounting portion 248 of track 232. A slot 250 is formed adjacent mounting portion 248 such that partial portion of rotary damper 236 extends through slot 250 and into groove 234. In accordance with one aspect of the invention, rotary damper 236 further includes teeth members 252 along its periphery, to be explained in further detail below.

[0034] Presenting arm 238 has a base portion 254 and a mouth portion 256. Base portion 254 is movably mounted

within groove 234 of track 232. Base portion 254 further includes a toothed outer edge 258 that cooperates with and mates with teeth members 252 of rotary damper 236. Mouth portion 256 is fixedly connected to base portion 254 and extends laterally from base portion 254. Mouth portion 256 is sized and shaped so as to generally correspond to the size and shape of a top surface 259 of receptacle portion 228. Mouth portion 256 further includes an opening 260 for receiving seat buckle 230. Preferably, mouth portion 256 also includes a latch mechanism 262 for retaining seat buckle 230 therein as presenting arm 238 delivers buckle 230 to receptacle 228.

[0035] A lip portion 262 of coil spring 240 is fixedly secured to a mounting bracket 264. Mounting bracket 264 is fixedly secured across groove 234 and to track 232 to retain presenting arm 238 within groove 234. A coiled portion 266 of coil spring 240 is mounted within groove 234 and under a bottom edge 268 of presenting arm 238 to bias presenting arm 238 into the presenting position. Rotary damper 236 serves to slow the biasing force of coil spring 240.

[0036] In operation, presenting arm assembly 222 is in the storage position, wherein arm assembly 222 is biased into the presenting position such that presenting arm 238 is extended upwardly with mouth portion 256 being spaced away from seat belt buckle receptacle 224. Because mouth portion 256 is positioned upwardly from receptacle portion 228 and in easy view of the vehicle occupant, a vehicle occupant is able to easily engage seat belt buckle 230 with opening 260 of mouth portion 256. Once seat belt buckle 230 is received in opening 260 of mouth portion 256, the vehicle occupant manually pushes mouth portion 256 downward to buckle receptacle portion 228 until seat belt buckle 230 is secured in buckle receptacle portion 228 by a latch mechanism (not shown). Alternatively, a central processing unit may be connected to rotary damper 236, or another suitable mechanism, to drive presenting arm 238 downward until mouth portion 256 is positioned directly over top surface 259 of receptacle portion 228. Opening 260 of mouth portion 256 aligns with an opening 270 in buckle receptacle portion 228 such that buckle 230 is received within buckle receptacle portion 228 and secured by a latch mechanism (not shown).

[0037] To remove buckle 230 from receptacle portion 228, it is preferred that once the vehicle engine is turned off, a central processing unit operates a solenoid to automatically de-latch buckle 230 from receptacle portion 228. Next, teeth members 252 of rotary damper 236, engaged with toothed outer edge 258 of base portion 254 of presenting arm 238 and the biasing force of coil spring 240 to return presenting arm 238 to the presenting position. Latch 262 in mouth portion 256 releases the buckle 230.

[0038] Alternatively, after buckle 230 is de-latched, presenting arm 238 of seat belt buckle receptacle 200 assembly may be returned to the engaged position such that mouth portion 256 is resting on top surface 259 of the buckle receptacle portion 228 with opening 260 in mouth portion 256 generally aligned with opening 270 in buckle receptacle portion 228 and secured by a latch mechanism. In accordance with this aspect of the invention, the presenting arm 238 is returned to the presenting position by the biasing force of coil spring 240 after de-latching mouth portion 256. Alternatively, rotary damper 236, or other suitable mechanism,

may be activated by the central processing unit and rotated a predetermined direction to move presenting arm 238 upwardly along track 232 into the presenting position. Once presenting arm 238 reaches the presenting position, approximately 4-8 inches from buckle receptacle 228, the central processing unit turns off the motor driving the rotary damper.

[0039] It is preferred that seat belt receptacle assembly 200 is used in combination with a seat belt presentation mechanism (not shown) that delivers the seat belt to a forward edge 272 of vehicle seat 223 on the opposite side of vehicle seat 223 that assembly 200 is positioned. Examples of such seat belt presentation mechanisms are shown in U.S. co-pending patent application Ser. No. 09/169,070. It is further preferred that the central processing unit operates both the seat belt presentation mechanism and seat belt receptacle assembly 200 such that both operate simultaneously.

[0040] Preferred embodiments of the present invention have been disclosed. A person of ordinary skill in the art would realize, however, that certain modifications would come within the teachings of this invention. Therefore, the following claims should be studied to determine the true scope and content of the invention.

What is claimed is:

1. A seat belt buckle receptacle presenter for presenting a seat belt buckle receptacle to a vehicle occupant, comprising:

a movable arm that is selectively movable between a storage position and a presenting position, wherein said movable arm is positioned adjacent a rear portion of a vehicle seat when said movable arm is in said storage position and said movable arm is positioned adjacent a forward portion when said movable arm is in said presenting position;

a seat belt buckle receptacle adapted to receive a seat belt buckle connected to said movable member; and

a track mechanism that moves said movable arm from said storage position to said presenting position.

2. The seat belt buckle receptacle presenter of claim 1, further including an extension member that has first and second ends, wherein said movable arm is pivotally connected to said first end of said extension member and said second end of said extension member is operatively connected to said track mechanism.

3. The seat belt buckle receptacle presenter of claim 2, further including a rear stop member for pivoting said seat belt buckle receptacle to a predetermined storage angle.

4. The seat belt buckle receptacle presenter of claim 2, further including a forward stop member for pivoting said seat belt buckle receptacle to a predetermined presenting angle.

5. The seat belt buckle receptacle presenter of claim 2, further including slot having first and second distal ends extending along a side surface of the vehicle seat, wherein said track mechanism is positioned within said vehicle seat and said extension member extends outwardly from said slot.

6. The seat belt buckle receptacle presenter of claim 4, wherein said predetermined presenting angle orients said seat belt buckle receptacle so as to be facing a vehicle occupant.

7. A seat belt buckle receptacle presenter for presenting a seat belt buckle receptacle to a vehicle occupant, comprising:

a seat belt buckle receptacle having an opening adapted to receive a seat belt buckle, said buckle receptacle mounted adjacent to a vehicle seat; and

a presenting arm that selectively moves between a presenting position and an engaged position relative to said buckle receptacle;

wherein said presenting arm is adapted to receive a seat belt buckle when in the presenting position and to deliver the seat belt buckle into said opening of said buckle receptacle as the presenting arm moves to the engaged position.

8. The seat belt buckle receptacle presenter of claim 7, wherein said presenting arm has a mouth portion with an opening therein for receiving a belt buckle.

9. The seat belt buckle receptacle presenter of claim 8, wherein said mouth portion extends laterally away from a base portion of said presenting arm at an approximately 90° angle.

10. The seat belt buckle receptacle presenter of claim 8, wherein said mouth portion is sized to be approximately the same size as a top portion of said seat belt buckle receptacle and said opening of said mouth portion is generally aligned with the opening of said seat belt buckle receptacle.

11. The seat belt buckle receptacle presenter of claim 7, wherein said presenting arm is telescopingly mounted in a groove formed in a track member that is fixedly secured to said buckle receptacle.

12. The seat belt buckle receptacle of claim 11, further including a coil spring positioned in said groove of said track member beneath a bottom edge of said presenting arm, wherein said coil spring biases said presenting arm into said presenting position.

13. The seat belt buckle receptacle of claim 12, further including a rotary damper having a toothed outer periphery, wherein said rotary damper is rotatably mounted to said track member such that said toothed outer periphery mates with a toothed outer edge of said presenting arm to cooperate with said coil spring to selectively move said presenting arm between said presenting position and said engaged position.

14. The seat belt buckle receptacle of claim 12, wherein a lip portion fixedly of said coil spring is connected to a mounting bar positioned across the track member and over said presenting arm.

15. The seat belt buckle receptacle of claim 13, wherein said rotary damper is rotatably mounted to a plate that is fixedly connected to said track.

16. The seat belt buckle receptacle of claim 15, wherein said track further includes a mounting portion having a slot therein, said plate being fixedly connected to said mounting

portion with said toothed rotary damper extending partially through said slot and into said groove of said track.

17. The seat belt buckle receptacle assembly of claim 7, wherein said seat belt buckle receptacle is oriented at a predetermined angle such that said opening of said seat belt buckle receptacle faces upward and away from the rear of the vehicle seat.

18. The seat belt buckle receptacle assembly of claim 7, wherein said presenting arm further includes a latch mechanism to secure said buckle as said presenting arm moves from said presenting position to said engaged position.

19. A seat belt buckle receptacle presenter for presenting a seat belt buckle receptacle to a vehicle occupant, comprising:

a seat belt buckle receptacle having an opening adapted to receive a seat belt buckle, said buckle receptacle mounted adjacent to a vehicle seat and oriented at an angle within the range of 30°-90° such that said opening is facing outwardly and away from said vehicle seat;

a track member fixedly secured to a side of said seat belt buckle receptacle, said track member having a groove extending therethrough;

a presenting arm mounted in said groove of said track member in a telescoping manner such that said presenting arm selectively moves between a presenting position and an engaged position relative to said buckle receptacle;

wherein said presenting arm includes a mouth portion and a base portion, said mouth portion extending laterally away from said base portion and having an opening that generally corresponds to the size and shape of said opening of said seat belt buckle receptacle, said opening of said mouth portion being adapted to receive a seat belt buckle when in the presenting position and to deliver the seat belt buckle into said opening of said buckle receptacle as the presenting arm moves to the engaged position.

20. The seat belt buckle receptacle of claim 19, further including a coil spring positioned in said groove beneath a bottom edge of said presenting arm to bias said presenting arm into said presenting position and rotary damper having a toothed outer periphery, wherein said rotary damper is rotatably mounted to a plate member and said plate member is fixedly secured to a mounting portion of said track member such that a portion of said toothed outer periphery of said rotary damper partially extends through a slot formed in said track member into said groove so as to mate with a toothed outer edge of said presenting arm to cooperate with said coil spring to selectively move said presenting arm between said presenting position and said engaged position.

21. The seat belt buckle receptacle of claim 19, wherein said presenting arm is motor driven by a central processing unit between said presenting position and said engaged position.

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