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 61/451,365 10 March 2011 (10.03.2011) US</p> <p>(71) Applicant (<i>for all designated States except US</i>): JOHN-SON CONTROLS TECHNOLOGY COMPANY [US/US]; 915 East 32nd Street, Holland, MI 49423 (US).</p> <p>(72) Inventor; and</p> <p>(75) Inventor/Applicant (<i>for US only</i>): HIEMSTRA, Bruce, A. [US/US]; 2691 N. Wagner Road, Ann Arbor, MI 48103 (US).</p> <p>(74) Agents: PHILLIPS, Craig A. et al.; Dickinson Wright PLLC, 2600 West Big Beaver Road, Suite 300, Troy, MI 48084 (US).</p> | <p>(81) Designated States (<i>unless otherwise indicated, for every kind of national protection available</i>): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.</p> <p>(84) Designated States (<i>unless otherwise indicated, for every kind of regional protection available</i>): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published:
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(54) Title: RECLINER MECHANISM

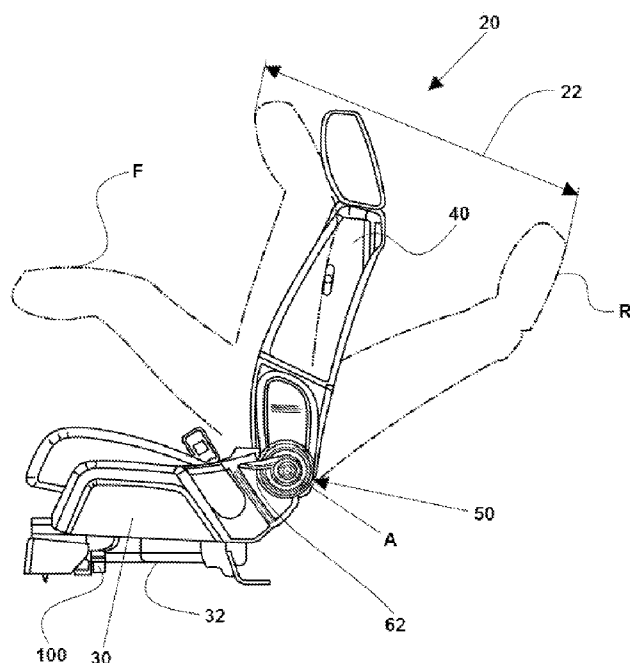


FIG. 2

(57) Abstract: An adjustment device for a vehicle seat and more particularly, to a tilt adjustment device which allows the seat back of the vehicle seat to move relative to the seat base. The tilt adjustment device is also configured to provide easy entry for rear seat passengers or access to areas behind the seat through decoupling latching mechanisms on the seat tracks and the seat back, which allow the seat to slide forward in the vehicle and the seat back to tilt forward. More specifically, through a primary latch assembly, the seat occupant may tilt the seat back relative to the seat base for comfort purposes using a generally puck-shaped internally-toothed rotary style recliner mechanism. A secondary latch system also provides the ability for the vehicle seat back to be tilted forward and if so equipped with a third latching assembly may allow the vehicle seat to slide forward.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - F16H 1/32 (2012.01)

USPC - 297/362

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - B60N 1/02; F16H 1/32 (2012.01)

USPC - 74/141,144; 192/223.1; 267/150; 297/344.1,354.12,362,367,373

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

MicroPatent, Google Patents

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,657,303 A (CROFT) 14 April 1987 (14.04.1987) entire document	1-8,10,12,19
A	US 4,781,415 A (HEESCH et al) 01 November 1988 (01.11.1988) entire document	1-19

☐ Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

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29 May 2012

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