

(19) World Intellectual Property Organization
International Bureau



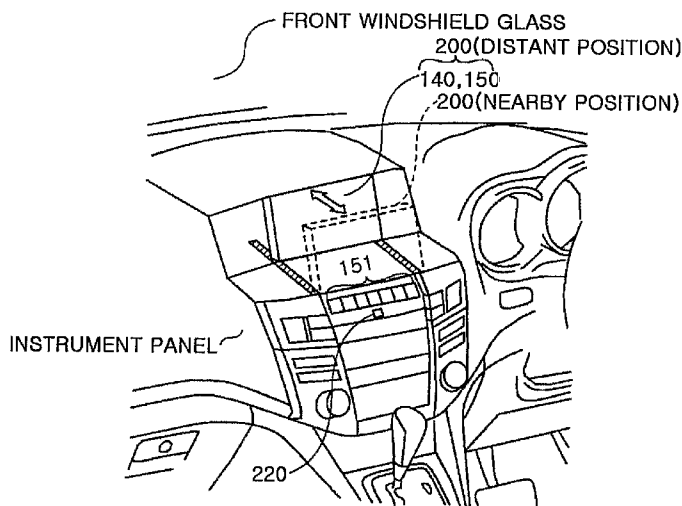
(43) International Publication Date
13 December 2007 (13.12.2007)

PCT

(10) International Publication Number
WO 2007/141628 A3

- (51) **International Patent Classification:**
B60K 35/00 (2006.01) *HO1H 25/04* (2006.01)
B60R 16/02 (2006.01) *G06F 3/033* (2006.01)
- (21) **International Application Number:**
PCT/IB2007/001485
- (22) **International Filing Date:** 6 June 2007 (06.06.2007)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
2006-159953 8 June 2006 (08.06.2006) JP
- (71) **Applicant (for all designated States except US):** TOYOTA JIDOSHA KABUSHIKI KAISHA [JP/JP]; 1, Toyota-cho, Toyota-shi, Aichi-ken 471-8571 (JP).
- (72) **Inventors; and**
- (75) **Inventors/Applicants (for US only):** KAWACHI, Kazuhiro [JP/JP]; c/o Toyota Jidosha Kabushiki Kaisha, of 1, Toyota-cho, Toyota-shi, Aichi-ken 471-8571 (JP). SANO, Hirotake [JP/JP]; c/o Toyota Jidosha Kabushiki Kaisha, of 1, Toyota-cho, Toyota-shi, Aichi-ken 471-8571 (JP).
- (81) **Designated States (unless otherwise indicated, for every kind of national protection available):** AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, 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, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
- (84) **Designated States (unless otherwise indicated, for every kind of regional protection available):** ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— with international search report
- (88) **Date of publication of the international search report:**
24 April 2008

(54) **Title:** VEHICLE INPUT DEVICE



(57) **Abstract:** A vehicle input device has an operating part (150) arranged within the passenger compartment and a signal processing part (172) that processes signals input through the operating part (150). The device includes a movable support mechanism that supports the operating part (150) to move between a distant position away from an operator and a nearby position close to the operator, a motor (210) for generating a drive force to displace the operating part (150), a control part (174) for controlling the motor (210), and an operation intention detector (220) for detecting an operator's intention to operate the operating part (150). The control part (174) controls the motor (210) to displace the operating part (150) into the nearby position if the operator's operation intention is detected by the operation intention detector (220).

WO 2007/141628 A3

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2007/001485

A CLASSIFICATION OF SUBJECT MATTER INV. B60K35/00 B60R16/02 H01H25/04 G06F3/033		
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) B60K B60R HOIH G06F		
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 practical, search terms used) EPO-Internal , WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X Y X Y A Y	JP 2003 101247 A (CLARION CO LTD) 4 April 2003 (2003-04-04) the whole document ----- WO 01/81111 A (FAURECIA IND [FR]; BONNOT DAVID [FR]) 1 November 2001 (2001-11-01) the whole document ----- US 2004/140959 A1 (MATSUMURA KAZUYUKI [JP] ET AL) 22 July 2004 (2004-07-22) the whole document ----- DE 100 08 226 A1 (BOSCH GMBH ROBERT [DE]) 6 September 2001 (2001-09-06) column 1, lines 9-19 ----- -/--	1-5,9, 11-13, 16,17 10,15 1,2,6,8, 11,13, 16,17 10 1,11,16, 17 10
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex		
* 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 document 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 ¹ ' 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		
Date of the actual completion of the international search <p style="text-align: center; font-weight: bold;">29 January 2008</p>		Date of mailing of the international search report <p style="text-align: center; font-weight: bold;">06/02/2008</p>
Name and mailing address of the ISA/ European Patent Office, P B 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel (+31-70) 340-2040, Tx 31 651 epo nl, Fax (+31-70) 340-3016		Authorized officer <p style="text-align: center; font-weight: bold;">Plenk, Rupert</p>

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2007/001485

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category'	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2005/027438 AI (ROCKETT DAVID W [US] ET AL) 3 February 2005 (2005-02-03) paragraph [0002] -----	10
A	EP 1 271 587 A (CAA AG [DE] HARMAN BECKER AUTOMOTIVE SYS [DE]) 2 January 2003 (2003-01-02) paragraph [0026] ; figure 1 -----	14
A	JP 2004 079391 A (TOYOTA MOTOR CORP ; TOYODA GOSEI KK; TOKAI RIKA co LTD) 11 March 2004 (2004-03-11) abstract -----	14
A	JP 2004 087290 A (MATSUSHITA ELECTRIC IND CO LTD) 18 March 2004 (2004-03-18) abstract -----	14
Y	DE 10 2004 020484 AI (DAIMLER CHRYSLER AG [DE] ; KIEKERT AG [DE]) 10 November 2005 (2005-11-10) paragraphs [0009] , [0029] - [0032] -----	15
Y	DE 101 45 026 AI (WITTE VELBERT GMBH & CO KG [DE]) 3 April 2003 (2003-04-03) column 1, lines 25-27 -----	15
Y	JP 2005 063773 A (TOKAI RIKA co LTD; TOYOTA MOTOR CORP) 10 March 2005 (2005-03-10) abstract -----	15
E	JP 2007 145238 A (FUJITSU TEN LTD) 14 June 2007 (2007-06-14) the whole document -----	1,2, 11, 16, 17
E	FR 2 896 192 A (PEUGEOT CITROEN AUTOMOBILES SA [FR]) 20 July 2007 (2007-07-20) the whole document -----	1,2, 11, 16, 17
E	FR 2 896 193 A (PEUGEOT CITROEN AUTOMOBILES SA [FR]) 20 July 2007 (2007-07-20) the whole document -----	1,2, 11, 16, 17

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2007/001485

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

- 1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

- 2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

- 3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

- 1. As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.
- 2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
- 3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
- 4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM POT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9,11-13,16,17

vehicle input device with movable operating unit

2. claim: 10

movement triggered by voice activation

3. claim: 14

design of operation switch (joystick)

4. claim: 15

operation switch with capacitance sensor

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2007/001485

Patent document cited in search report •	A	Publication date	Patent family member(s)	Publication date
JP 2003101247	A	04-04-2003	NONE	
WO 0181111	A	01-11-2001	AU 5487601 A FR 2807978 A1	07-11-2001 26-10-2001
US 2004140959	A1	22-07-2004	JP 2004126354 A	22-04-2004
DE 10008226	A1	06-09-2001	EP 1127748 A2 JP 2001255890 A	29-08-2001 21-09-2001
US 2005027438	A1	03-02-2005	US 2007244628 A1	18-10-2007
EP 1271587	A	02-01-2003	DE 10131039 A1 JP 2003081032 A US 2003016208 A1	23-01-2003 19-03-2003 23-01-2003
JP 2004079391	A	11-03-2004	NONE	
JP 2004087290	A	18-03-2004	DE 10339469 A1 JP 3988584 B2 US 2004060807 A1	11-03-2004 10-10-2007 01-04-2004
DE 102004020484	A1	10-11-2005	NONE	
DE 10145026	A1	03-04-2003	NONE	
JP 2005063773	A	10-03-2005	NONE	
JP 2007145238	A	14-06-2007	NONE	
FR 2896192	A	20-07-2007	NONE	
FR 2896193	A	20-07-2007	NONE	