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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): 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.
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[Continued on next page]

(54) Title: STYLUS ORIENTATION DETECTION

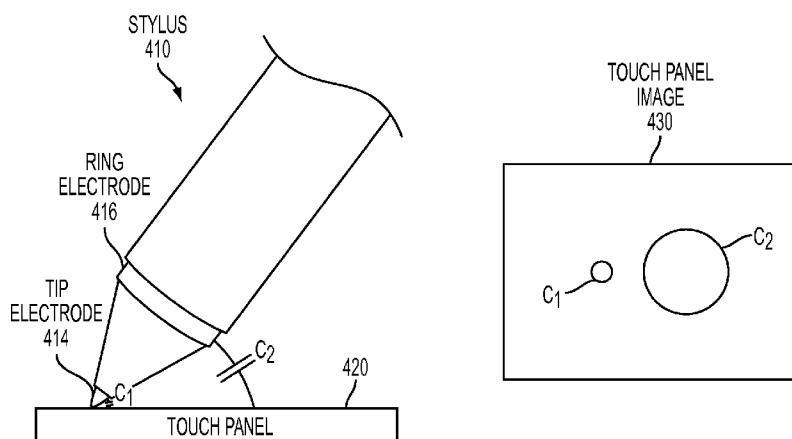


FIG. 4B

(57) Abstract: Stylus orientation detection is disclosed. In an example, the orientation of a stylus relative to a contacting surface, e.g., a touch panel, can be detected by detecting a capacitance at one or more locations on the stylus relative to the surface, and then using the capacitance(s) to determine the orientation of the stylus relative to the surface. In another example, the orientation of a stylus relative to a contacting surface, e.g., a touch panel, can be detected by first detecting the orientation of the stylus relative to a reference, detecting the orientation of the contacting surface relative to the reference, and then calculating the orientation of the stylus relative to the contacting surface using the two detected orientations.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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18 April 2013

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/043025

A. CLASSIFICATION OF SUBJECT MATTER
INV. G06F3/044 G06F3/033
ADD.

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)
G06F G06K H03K

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)

EP0-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	US 2010/289754 A1 (SLEEMAN PETER [GB] ET AL) 18 November 2010 (2010-11-18) paragraph [0001] - paragraph [0034] -----	1-5,7, 18-20
X	US 2011/043489 A1 (YOSHIMOTO YOSHIHARU [JP] ET AL) 24 February 2011 (2011-02-24) paragraph [0001] - paragraph [0018] paragraph [0123] paragraph [0146] - paragraph [0150] -----	1-8, 18-20
X	US 2010/020037 A1 (NARITA TOMOYA [JP] ET AL) 28 January 2010 (2010-01-28) paragraph [0001] - paragraph [0019] paragraph [0051] - paragraph [0057] ----- -/--	1-8, 18-20



Further documents are listed in the continuation of Box C.



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 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

Date of the actual completion of the international search

8 February 2013

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/043025

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 all searchable 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 PCT/ISA/ 210

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

1. claims: 1-14, 18-20

Detecting orientation of an input device having two electrodes which form a capacitance with a touch sensitive surface.

2. claims: 15-17

Detecting the orientation of a device relative to another by sensing absolute orientation of both device relative to a third point of reference.

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2012/043025

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2010/271332 A1 (WU WEN-TAI [TW] ET AL) 28 October 2010 (2010-10-28) paragraph [0002] - paragraph [0015]; figures 1-9 -----	1-6
X	US 6 184 873 B1 (WARD DANIEL R [US] ET AL) 6 February 2001 (2001-02-06) the whole document -----	1-5
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A	paragraph [0001] - paragraph [0009] -----	1-6,9-12
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A	US 6 326 956 B1 (JAEGER DENNY [US] ET AL) 4 December 2001 (2001-12-04) column 1, line 5 - column 2, line 35; figures 1-4 -----	1-14, 18-20
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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