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(71) **Applicant**: **APPLE INC.** [US/US]; 1 Infinite Loop, M/s 169-3ipl, Cupertino, CA 95014 (US).

(72) **Inventors**: **LITTLE, Alexander, H.**; 1 Infinte Loop, M/S 77-1GL, Cupertino, CA 95014 (US). **MANJARREZ, Eli T.**; 1 Infinte Loop, M/S 77-1GL, Cupertino, CA 95014 (US).

(74) **Agents**: **EUREK, Justin** et al.; KILPATRICK TOWNSEND & STOCKTON LLP, Eighth Floor, Two Embarcadero Center, San Francisco, CA 94111 (US).

(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, BN, 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, PA, 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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Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:

— *with international search report (Art. 21(3))*

[Continued on next page]

(54) **Title**: DETERMINING THE CHARACTERISTIC OF A PLAYED CHORD ON A VIRTUAL INSTRUMENT

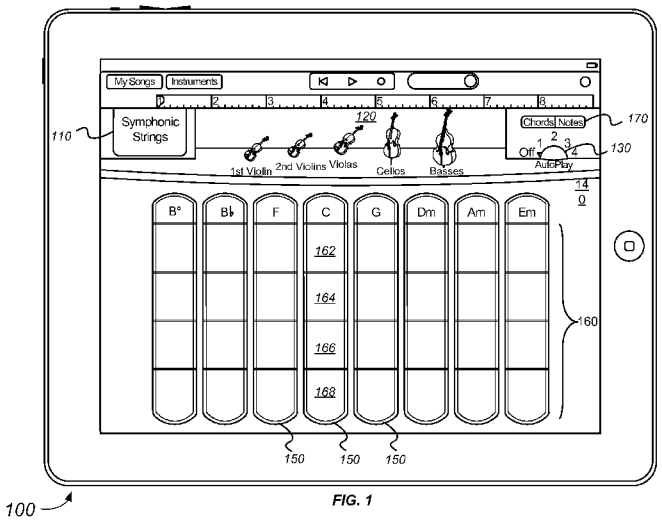


FIG. 1

(57) **Abstract**: A user interface implemented on a touch-sensitive display for a virtual musical instrument comprising a plurality of chord touch regions configured in a predetermined sequence, each chord touch region corresponding to a chord in a musical key and being divided into a plurality of separate touch zones, the plurality of chord touch regions defining a predetermined set of chords, where each of the plurality of separate touch zones in each region is associated with one or more preselected MIDI files stored in a computer-readable medium. Each of the plurality of touch zones is configured to detect one or more of a plurality of touch gesture articulations including at least one of a legato articulation, a pizzicato articulation, or a staccato articulation. The one or more of the plurality of touch gesture articulations determines the preselected MIDI file associated with each of the plurality of separate touch zones.

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— *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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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2013/029466

A. CLASSIFICATION OF SUBJECT MATTER
INV. G10H1/02 G10H7/00 G10H1/38 G10H1/28
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)
G10H

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)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 2 045 796 A1 (PLATO CORP [JP]) 8 April 2009 (2009-04-08) paragraphs [0045], [0052] - [0055], [0120]; figures 1,4,8,9	1
X,P	US 2012/174735 A1 (LITTLE ALEXANDER HARRY [US] ET AL) 12 July 2012 (2012-07-12) abstract; figures 1,3	21
A	US 2011/100198 A1 (GATZSCHE GABRIEL [DE] ET AL) 5 May 2011 (2011-05-05) paragraphs [0064], [0101], [0104], [0108], [0111], [0114], [0161], [0225] - [0228], [0233], [0243]; figures 2,16	1,21

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[X] Further documents are listed in the continuation of Box C.

[X] 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	Date of mailing of the international search report
26 July 2013	07/11/2013

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Feron, Marc

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2013/029466

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2008/307945 A1 (GATZSCHE GABRIEL [DE] ET AL) 18 December 2008 (2008-12-18) column 9, line 58 - column 11, line 4; figures 10,11	1,21
A	US 5 905 223 A (GOLDSTEIN MARK [US]) 18 May 1999 (1999-05-18) abstract; figures 2,12,19-27	1,21

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2013/029466

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.:

1-13, 21-27

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: 1-13, 21-27

   user interface for a virtual musical instrument distinguishing between different touch gestures in each of separate touch zones of chord touch regions each corresponding to a chord in a musical key (note that the object of claim 21, unlike claim 1, does not specify the effect of a detected touch gesture)

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2. claims: 14-17, 28-34

   program causing a preselected audio signal to be played in response to an unspecified user input in an unspecified zone of a touch sensitive display. Said display also includes, possibly in another area, a juxtaposed set of regions defining a set of chords.

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3. claims: 18-20

   method for determining whether a note played on a virtual stringed instrument is to be played legato, pizzicato or staccato depending on the detected touch gesture on an unspecified touch zone of the user interface

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4. claims: 35-40

   Program displaying a virtual musical instrument with active touch zones, in which each touch zone is associated with only one audio signal, and plays back only that audio signal associated with the touch zone (see line 14, even though it is able to detect two or more gestures on that touch zone, as implied by line 7)

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5. claims: 41-49

   program implementing a dual virtual flywheel system generating dual virtual momentums based on user input (this user input not necessarily on a touch sensitive display) and generating an "expression level" for unspecified (perhaps nonmusical) use, wherein the touchscreen also includes a juxtaposed and otherwise known and perhaps totally unrelated touch sensitive display for a virtual musical instrument with touch zones having an unspecified effect. Contrary to all previous subjects, no articulations are mentioned in any claim of this concept.

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6. claims: 50-60

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

program implementing a dual virtual flywheel system generating dual virtual momentums for unspecified use based on user input on a touch sensitive display without any musical features.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2013/029466

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