



- (51) **International Patent Classification:**
G06F 3/044 (2006.01)
- (21) **International Application Number:**
PCT/US2013/038323
- (22) **International Filing Date:**
26 April 2013 (26.04.2013)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/639,373 27 April 2012 (27.04.2012) US
- (71) **Applicant:** **ALSENTIS, LLC** [US/US]; 1261 S Waverly Road, Holland, Michigan 49423 (US).
- (72) **Inventors:** **CALDWELL, David W.**; 16253 Ransom Street, Holland, Michigan 49423 (US). **SCHAEFER, William D.**; 184 Rosebud Lane, SW, Grand Rapids, Michigan 49534 (US). **BOS, Robert G.**; 15261 Groesbeck Street, Grand Haven, Michigan 49417 (US). **KUREK, Stefan G.**; 659 Innes Street, NE, Grand Rapids, Michigan 49503 (US).
- (74) **Agents:** **CIARAVINO, Vito A.** et al.; Warner Norcross & Judd LLP, 900 Fifth Third Center, 111 Lyon Street, NW, Grand Rapids, Michigan 49503-2487 (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.

- (84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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).

Published:

- with international search report (Art. 21(3))
- 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))

- (88) **Date of publication of the international search report:**
19 December 2013

(54) **Title:** APPARATUS FOR DETERMINING A TOUCH INPUT STIMULUS

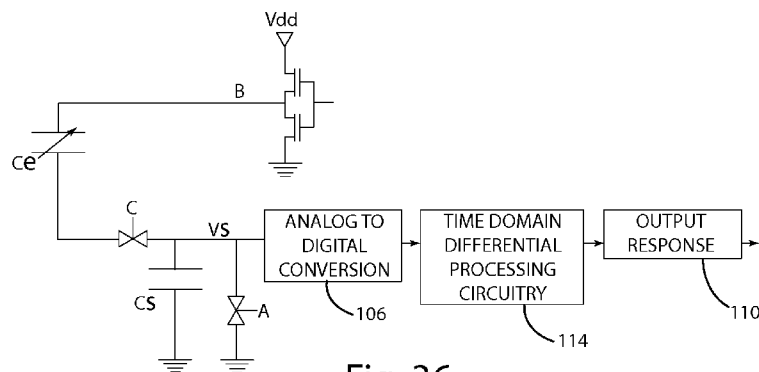


Fig. 36

(57) **Abstract:** A capacitive sensor for detecting a stimulus. The capacitive sensor includes first and second electrodes defining a capacitive coupling, and a processing unit electrically coupled to the first and second electrodes to determine the presence of a stimulus based on the rate of change of the capacitive coupling. A substrate is positioned adjacent the first and second electrodes, wherein the stimulus corresponds to the placement of an object against the substrate. The processing unit is operative to determine a time rate of change based on successive measurements of the capacitive coupling and in response to the capacitive coupling being greater than a predetermined reference value.

