



US 20080042989A1

(19) **United States**

(12) **Patent Application Publication**

**WESTERMAN et al.**

(10) **Pub. No.: US 2008/0042989 A1**

(43) **Pub. Date: Feb. 21, 2008**

(54) **TYPING WITH A TOUCH SENSOR**

(75) Inventors: **WAYNE WESTERMAN**, Wellington, MO (US); **John G. Elias**, Townsend, DE (US)

Correspondence Address:  
**APPLE C/O MORRISON AND FOERSTER, LLP**  
**LOS ANGELES**  
**555 WEST FIFTH STREET SUITE 3500**  
**LOS ANGELES, CA 90013-1024 (US)**

6,888,536, which is a division of application No. 09/236,513, filed on Jan. 25, 1999, now Pat. No. 6,323,846.

(60) Provisional application No. 60/072,509, filed on Jan. 26, 1998.

**Publication Classification**

(51) **Int. Cl.**  
**G06F 3/041** (2006.01)  
(52) **U.S. Cl.** ..... **345/173**

(73) Assignee: **Apple Inc.**, Cupertino, CA

(21) Appl. No.: **11/830,801**

(22) Filed: **Jul. 30, 2007**

**Related U.S. Application Data**

(60) Continuation of application No. 11/015,434, filed on Dec. 17, 2004, which is a continuation of application No. 09/919,266, filed on Jul. 31, 2001, now Pat. No.

(57) **ABSTRACT**

Apparatus and methods are disclosed for simultaneously tracking multiple finger and palm contacts as hands approach, touch, and slide across a proximity-sensing, multi-touch surface. Identification and classification of intuitive hand configurations and motions enables unprecedented integration of typing, resting, pointing, scrolling, 3D manipulation, and handwriting into a versatile, ergonomic computer input device.

