

US007880732B2

## (12) United States Patent

#### Goertz

#### (54) TOUCH SCREEN FOR MOBILE TELEPHONE

- (75) Inventor: Magnus George Goertz, Stockholm (SE)
- (73) Assignee: Neonode Inc., San Ramon, CA (US)
- (\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.
- (21) Appl. No.: 10/494,055
- (22) PCT Filed: Nov. 4, 2002
- (86) PCT No.: PCT/SE02/02000

§ 371 (c)(1), (2), (4) Date: Apr. 29, 2004

(87) PCT Pub. No.: WO03/038592

PCT Pub. Date: May 8, 2003

#### (65) **Prior Publication Data**

US 2004/0263482 A1 Dec. 30, 2004

#### (30) Foreign Application Priority Data

Nov. 2, 2001 (SE) ...... 0103835

- (51) Int. Cl. *G06F 3/042* (2006.01)
- (52) U.S. Cl. ..... 345/175; 178/18.09

#### (56) **References Cited**

#### U.S. PATENT DOCUMENTS

4,847,606 A	7/1989	Beiswenger	
4,880,969 A	11/1989	Lawrie	
5,003,505 A *	3/1991	McClelland	345/173
5,016,008 A *	5/1991	Gruaz et al.	341/33

#### (10) Patent No.: US 7,880,732 B2

#### (45) **Date of Patent:** Feb. 1, 2011

5,119,079	A *	6/1992	Hube et al 715/823
5,179,369	A *	1/1993	Person et al 345/175
5,414,413	A *	5/1995	Tamaru et al 345/175
5,422,494	A *	6/1995	West et al 250/551
5,579,035	Α	11/1996	Beiswenger
5,785,439	Α	7/1998	Bowen
6,073,036	A *	6/2000	Heikkinen et al 455/550.1
6,411,283	B1 *	6/2002	Murphy 345/173
6,429,857	B1 *	8/2002	Masters et al 345/175
6,628,268	B1	9/2003	Harada et al.
6,864,882	B2 *	3/2005	Newton 345/173

#### (Continued)

#### FOREIGN PATENT DOCUMENTS

EP 0 330 767 9/1989

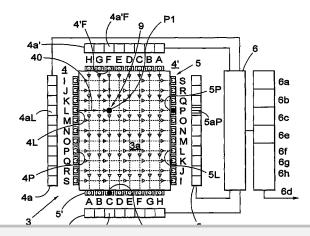
#### (Continued)

Primary Examiner—Bipin Shalwala Assistant Examiner—Steven E Holton (74) Attorney, Agent, or Firm—Soquel Group LLC

#### (57) **ABSTRACT**

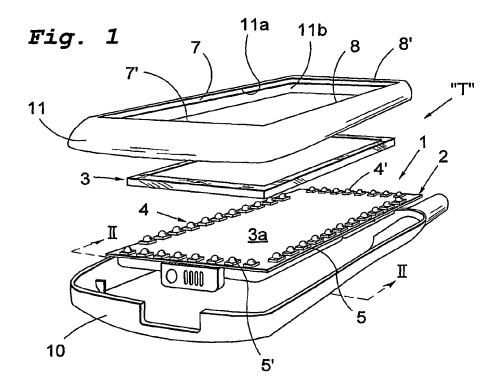
A touch screen arrangement fitted to a mobile telephone apparatus and built-on or resting on a substrate. The touch screen includes a display unit and a number of light pulse emitting units and a number of light pulse receiving units, said units being edge-related to said display unit. The light pulse emitting units and the light pulse receiving units are orientated adjacent said display unit, with the directions of said emitted and received light pulses being at right angles, or at least generally at right angles, to a planar surface on the display unit. The touch screen also includes four light pulse deflecting devices positioned close to the display surface.

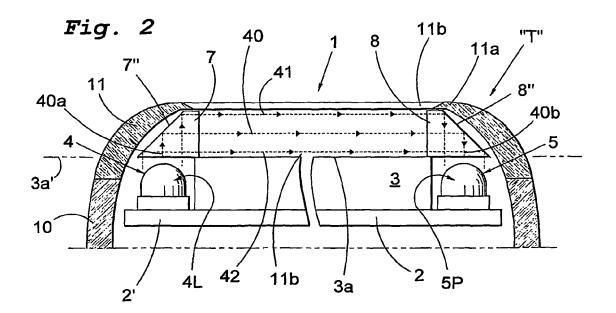
#### 18 Claims, 5 Drawing Sheets



U.S. PATENT DOCUMENTS			WO	WO 01/02949 A1	1/2001
2002/00673	46 A1* 6/2002	2 Mouton 345/173	WO WO	01/40922 A1 WO 03/038592 A1	6/2001 5/2003
		IT DOCUMENTS			
JP	5-173699	7/1993	* cited	by examiner	

**DOCKET A L A R M** Find authenticated court documents without watermarks at <u>docketalarm.com</u>.





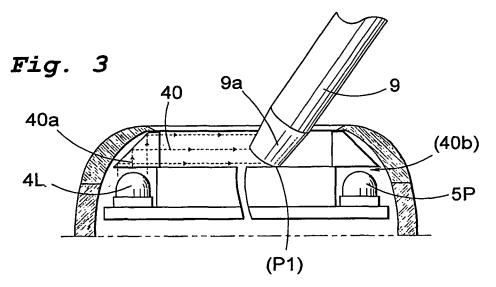
D CKE.  $\bigcirc$ Α R A Find authenticated court documents without watermarks at <u>docketalarm.com</u>. Μ

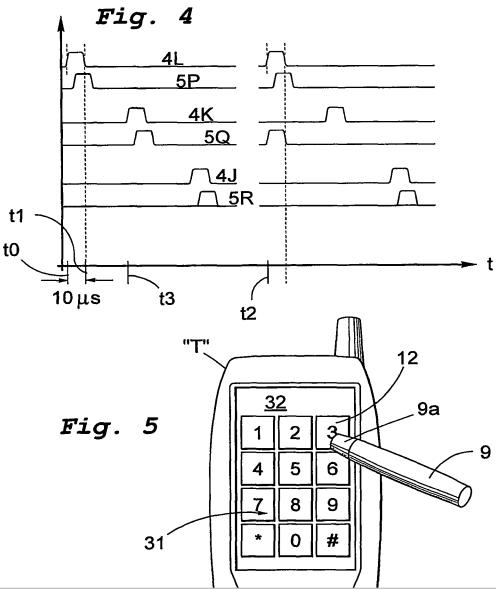
CKE.

R

М

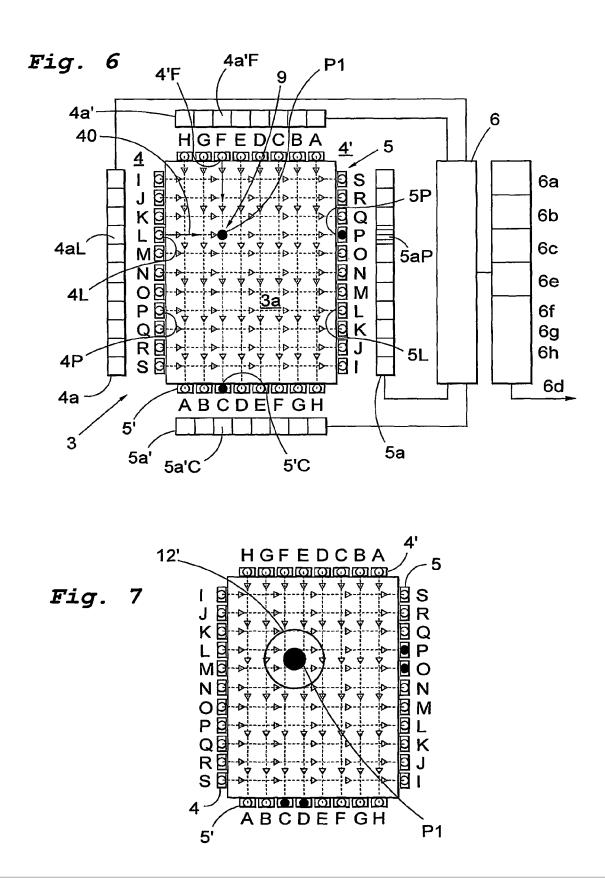
Α





Find authenticated court documents without watermarks at docketalarm.com.

Α



LARM Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

## DOCKET A L A R M



# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## **Real-Time Litigation Alerts**



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## **Advanced Docket Research**



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## **Analytics At Your Fingertips**



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

#### LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

#### FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

### E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.