

(12) **United States Patent**
Murphy(10) **Patent No.:** **US 6,727,892 B1**
(45) **Date of Patent:** ***Apr. 27, 2004**(54) **METHOD OF FACILITATING THE
SELECTION OF FEATURES AT EDGES OF
COMPUTER TOUCH SCREENS**(75) Inventor: **Stephen C. Murphy**, Meridian, ID
(US)(73) Assignee: **Micron Technology, Inc.**, Boise, ID
(US)(*) Notice: Subject to any disclaimer, the term of this
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U.S.C. 154(b) by 0 days.

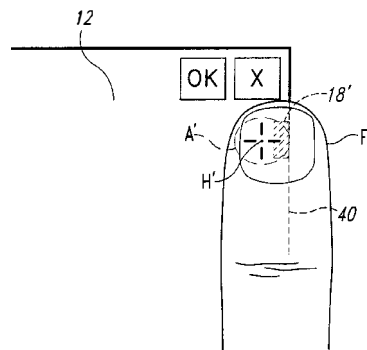
This patent is subject to a terminal disclaimer.

(21) Appl. No.: **09/316,075**(22) Filed: **May 20, 1999**(51) Int. Cl.⁷ **G09G 5/00**(52) U.S. Cl. **345/173; 345/157; 345/179;**
345/180; 345/856; 345/901; 178/18.01;
178/19.01; 178/19.04(58) Field of Search **345/173, 179,**
345/157, 180, 901, 856; 178/18.01, 19.04,
19.01(56) **References Cited****U.S. PATENT DOCUMENTS**4,723,211 A * 2/1988 Barker et al. **707/514**
4,903,012 A 2/1990 Ohuchi **340/709**
5,119,079 A 6/1992 Hube et al. **340/712**

(List continued on next page.)

OTHER PUBLICATIONSMicroTouch Systems, Inc., TouchWare for Windows NT
User's Guide. Document No. 19-217, Version 2.2. 1996,
1998.MicroTouch Systems, Inc., TouchWare for OS/2 User's
Guide. Document No. 19-222, Version 2.0. 1998.MicroTouch Systems, Inc., TouchWare for Macintosh
User's Guide. Document No. 19-210, Version 2.2. 1994,
1996-97.MicroTouch Systems, Inc., TouchWare User's Guide. Docu-
ment No. 19-207, Version 3.5. 1994-95, 1997-98.MicroTouch Systems, Inc., TouchWare Software for Win-
dows User's Guide. Document No. 19-224, Version 2.6.
1997-2002.MicroTouch Systems, Inc., TouchWare for Macintosh (USB
controllers) User's Guide. Document No. 19-233, Version
2.0. 1999.*Primary Examiner*—Richard Hjerpe*Assistant Examiner*—Abbas I Abdulselam(74) *Attorney, Agent, or Firm*—Dorsey & Whitney LLP(57) **ABSTRACT**

In one embodiment of the invention, a hot spot is normally centered in an area of contact between a user's finger and a touch screen to position the hot spot on an icon or other feature thereby selecting a program or function corresponding to the icon or feature. When the contact area is near an edge, the hot spot is offset toward the edge so that it coincides more closely to the center of the user's finger, thus allowing an icon or other feature adjacent the edge of the screen to be more easily selected. In another embodiment, a cursor is displayed on a touch screen at a location that is offset from the contact area between a finger and the screen. The cursor, which is used as the hot spot of the computer, is normally offset above the contact area except when the contact area is close to the bottom of the screen. The cursor is then offset to the left or right of the contact area depending on whether the contact area is to the left or right of the screen, respectively, so that icons or features adjacent the left or right edges of the screen can be selected. Similarly, when the contact area is very close to the bottom of the screen, the cursor is offset downwardly and to the right or left so that icons or features adjacent the bottom edge of the screen can be selected. Alternatively, a touch sensitive area incapable of displaying an image may be provided beneath a display area of the touch screen to allow icons or features adjacent the bottom edge of the display area to be selected.

86 Claims, 13 Drawing Sheets

U.S. PATENT DOCUMENTS

5,177,328 A	1/1993	Ito et al.	178/18	5,854,988 A *	12/1998	Davidson et al.	701/50
5,386,219 A *	1/1995	Greanias	345/174	RE36,137 E *	3/1999	Nakama et al.	708/141
5,452,414 A *	9/1995	Rosendahl et al.	345/174	5,914,702 A	6/1999	Derocher et al.	345/157
5,459,831 A *	10/1995	Brewer et al.	345/853	5,956,019 A	9/1999	Bang et al.	345/173
5,510,813 A *	4/1996	Makinawa et al.	345/173	5,956,020 A *	9/1999	D'Amico	345/173
5,642,490 A *	6/1997	Morgan et al.	345/173	6,040,824 A	3/2000	Maekawa et al.	345/173
5,754,178 A *	5/1998	Johnston, Jr. et al.	345/343	6,157,379 A *	12/2000	Singh	345/333
5,757,368 A	5/1998	Gerpheide et al.	345/339	6,184,860 B1 *	2/2001	Yamakawa	345/146
5,761,681 A	6/1998	Huffman et al.	707/500	6,211,856 B1 *	4/2001	Choi et al.	345/173
5,777,605 A	7/1998	Yoshinobu et al.	345/173	6,225,985 B1 *	5/2001	Armstrong et al.	345/177
5,821,930 A *	10/1998	Hanson	345/173	6,232,960 B1 *	5/2001	Goldman	345/168
5,825,352 A	10/1998	Bisset et al.	345/173	6,411,283 B1 *	6/2002	Murphy	345/173

* cited by examiner

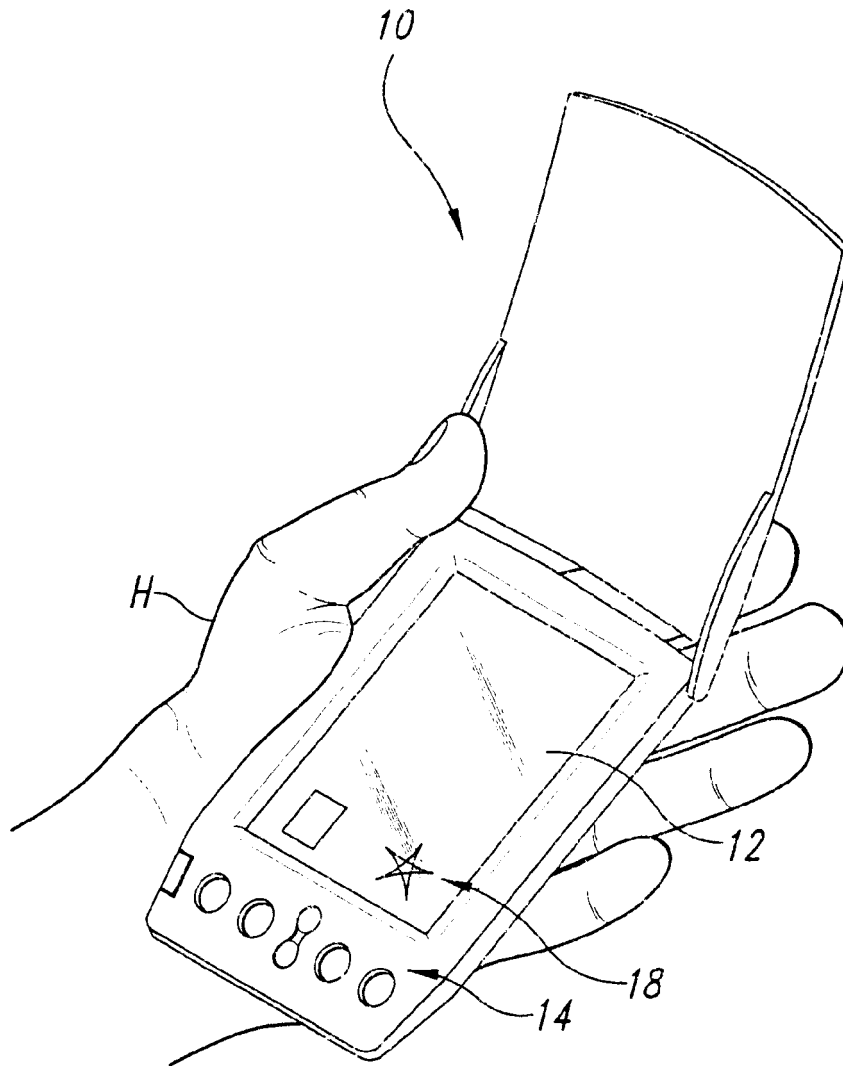


Fig. 1
(Prior Art)

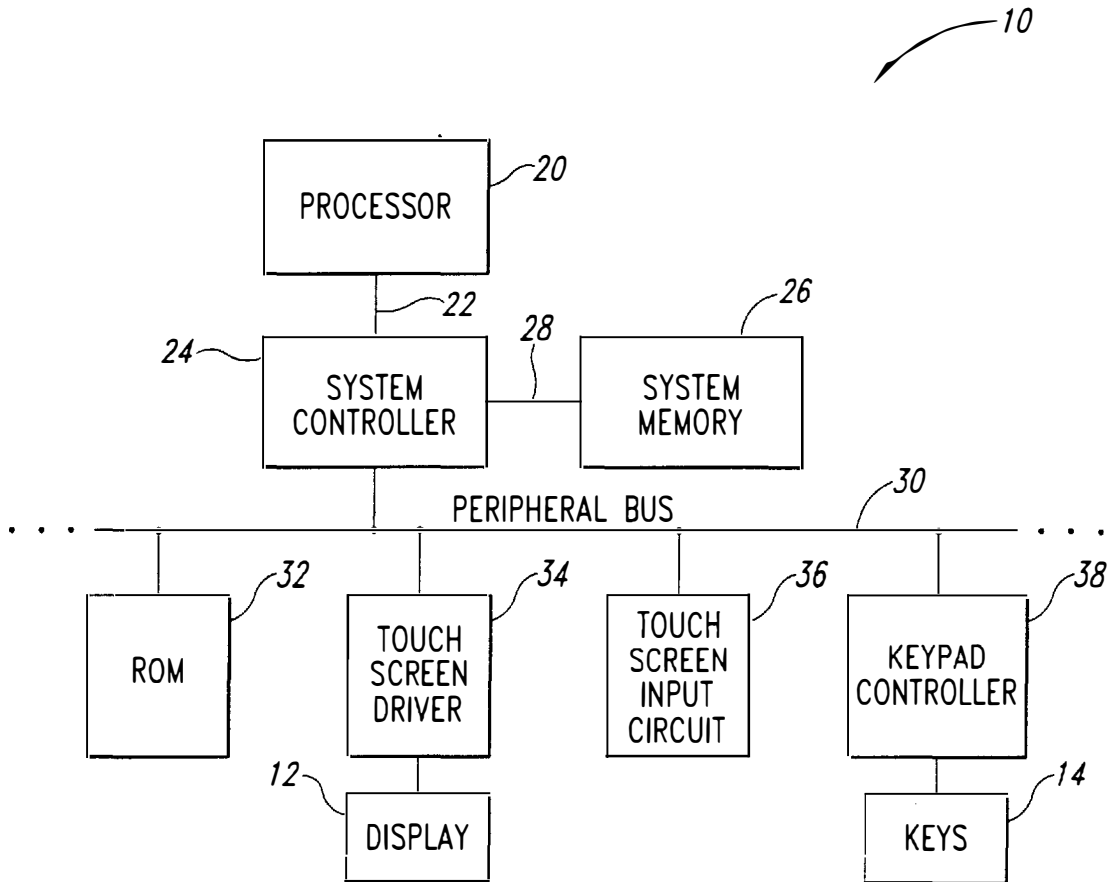


Fig. 2
(Prior Art)

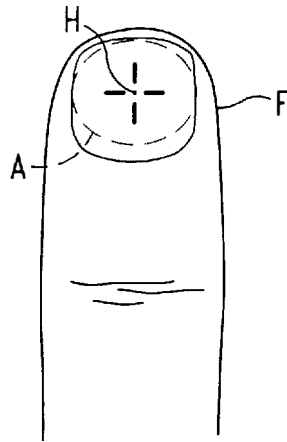


Fig. 3

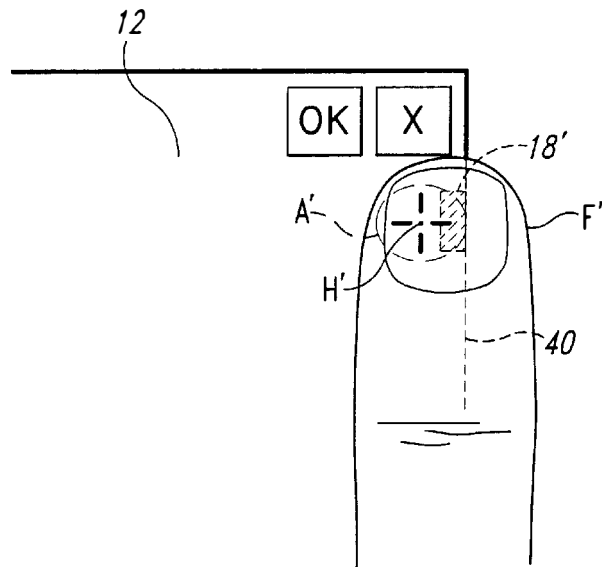


Fig. 4

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