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(54) **HAND-HELD COMPUTER DEVICE AND METHOD FOR INTERACTIVE DATA ACQUISITION, ANALYSIS, ANNOTATION, AND CALIBRATION**

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G06F 19/00 (2006.01)
G06F 15/16 (2006.01)

(52) **U.S. Cl.** **700/168**; 709/201

(58) **Field of Classification Search** 709/101; 700/17, 66, 83, 143, 150, 168
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,565,999 A * 1/1986 King et al. 345/158
5,132,968 A 7/1992 Cephus
5,220,522 A 6/1993 Wilson et al.
5,227,614 A 7/1993 Danielson et al.
5,386,360 A 1/1995 Wilson et al.
5,410,141 A 4/1995 Koenck et al.
5,587,577 A 12/1996 Schultz
5,638,299 A 6/1997 Miller
5,790,977 A 8/1998 Ezekiel
5,827,179 A 10/1998 Lichter et al.
5,873,990 A * 2/1999 Wojciechowski et al. ... 204/406
5,876,351 A 3/1999 Rohde
5,927,603 A * 7/1999 McNabb 239/63
5,941,837 A * 8/1999 Amano et al. 600/595
6,039,258 A * 3/2000 Durbin et al. 235/472.01
6,085,576 A * 7/2000 Sunshine et al. 73/29.01
6,221,012 B1 * 4/2001 Maschke et al. 600/301
6,238,338 B1 * 5/2001 DeLuca et al. 600/300
6,375,572 B1 * 4/2002 Masuyama et al. 463/43
7,107,072 B1 * 9/2006 Smith 455/556.2

FOREIGN PATENT DOCUMENTS

EP 450829 A1 * 10/1991

OTHER PUBLICATIONS

Gary T. Derosiers, "Pilot Hardware Add-Ons", Handheld Systems 6.4, Jul./Aug. 1998.
Vannevar Bush, "As We May Think", Atlantic Monthly, vol. 176, No. 1, Jul. 1945, pp. 101-108.

* cited by examiner

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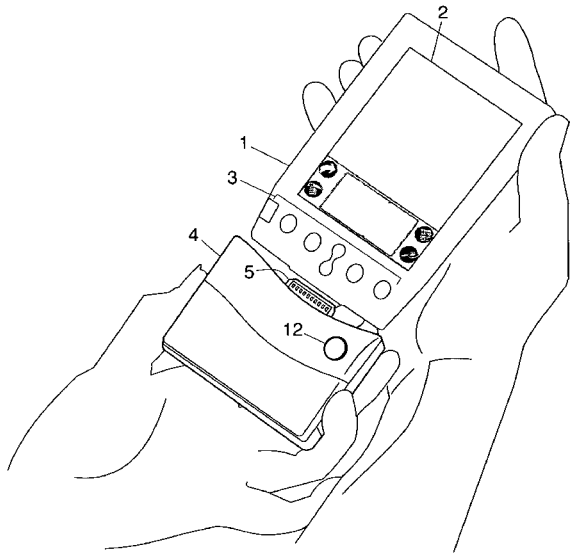
(57) **ABSTRACT**

A handheld computer device for data acquisition is described. The device includes a hardware interface to be connected to a processing device and to an attachable sensor. The device also includes a data module to interact with the sensor and with the processing device and a display module to display data collection results on a display of the processing device.

37 Claims, 23 Drawing Sheets