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(54) **MULTI-FUNCTIONAL ELECTRONIC DEVICE WITH A CONTINUOUSLY ACCESSIBLE POINTING DEVICE**

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H05K 5/00 (2006.01)

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(58) **Field of Classification Search** 361/679–681, 361/683

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,168,423	A	12/1992	Ohgami et al.	
5,229,921	A	7/1993	Bohmer	
5,268,817	A	12/1993	Miyagawa et al.	
5,489,924	A	2/1996	Shima et al.	
5,548,478	A	8/1996	Kumar et al.	
5,644,469	A	7/1997	Shioya et al.	
5,940,153	A *	8/1999	Castaneda et al.	349/58
5,949,408	A	9/1999	Kang et al.	
6,005,767	A	12/1999	Ku et al.	
6,094,341	A	7/2000	Lin	
6,125,040	A	9/2000	Nobuchi et al.	
6,196,850	B1	3/2001	Dietz et al.	
6,231,371	B1	5/2001	Helot	
6,282,082	B1	8/2001	Armitage et al.	
6,396,687	B1	5/2002	Sun et al.	
6,430,038	B1	8/2002	Helot et al.	
6,437,973	B1	8/2002	Helot et al.	
6,464,195	B1	10/2002	Hildebrandt	
6,477,871	B1	11/2002	Shaw et al.	
6,483,445	B1	11/2002	England	
6,504,707	B1	1/2003	Agata et al.	
6,519,143	B1	2/2003	Goko	
6,519,148	B1	2/2003	Nakagawa et al.	
6,636,204	B1 *	10/2003	Santoh	345/179
6,654,234	B1	11/2003	Landry et al.	
6,707,665	B1	3/2004	Hsu et al.	
6,717,798	B1	4/2004	Bell et al.	
6,774,870	B1	8/2004	Mead, Jr. et al.	
6,816,365	B1	11/2004	Hill et al.	
6,829,140	B1	12/2004	Shimano et al.	

(Continued)

FOREIGN PATENT DOCUMENTS

JP	07-049725	2/1995

(Continued)

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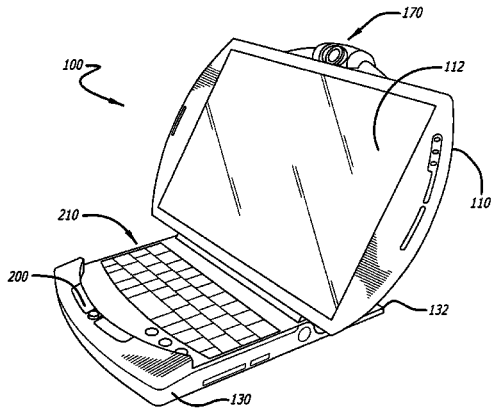
(57) **ABSTRACT**

According to one embodiment of the invention, an electronic device comprises a body case, a display and a pointing device. Featuring a flat panel display, the display is rotationally coupled to the body case and adapted to be translated over the body case. The pointing device is positioned at an edge of a first body of the body case. The pointing device is accessible and remains uncovered by the display for all positions of the electronic device and display.

16 Claims, 8 Drawing Sheets