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(54) **OPENING CHILD WINDOWS IN DUAL DISPLAY COMMUNICATION DEVICES**

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G06F 3/0481	(2013.01)
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G06F 3/0488	(2013.01)
G06F 3/14	(2006.01)

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USPC 715/795, 790; 345/1.1

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,835,090	A	11/1998	Clark et al.	
6,331,840	B1	12/2001	Nielson et al.	
6,545,669	B1 *	4/2003	Kinawi et al.	345/173
6,577,496	B1	6/2003	Gioscia et al.	
6,919,864	B1	7/2005	Macor	
6,987,988	B2	1/2006	Uchiyama	
7,289,083	B1	10/2007	Canova, Jr.	

(Continued)

FOREIGN PATENT DOCUMENTS

EP	1775925	4/2007

OTHER PUBLICATIONS

Google images, accessed Apr. 18, 2011, 6 pages.

(Continued)

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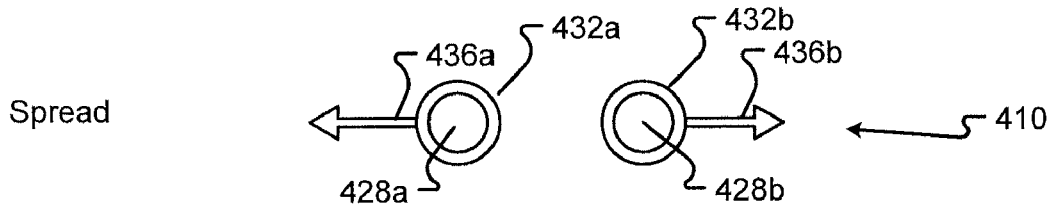
(57) **ABSTRACT**

The present disclosure is directed to methodologies and devices for handling maximizing and minimizing of hierarchically related windows.

23 Claims, 34 Drawing Sheets