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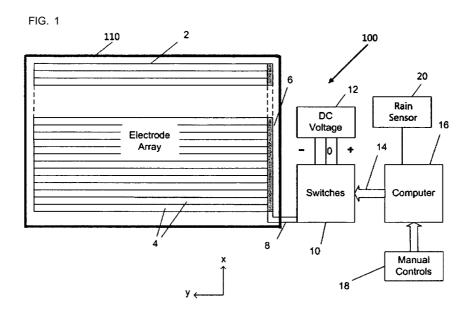
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(54) Title: A SURFACE TO MOVE A FLUID VIA FRINGE ELECTRIC FIELDS



(57) Abstract: Macroscopic volumes of fluid can be moved across a surface, including windshields, without mechanical assistance. Insulated electrodes, which for windshields and windows are preferably transparent, are embedded in the surface of the windshield. Varying voltages are supplied to the electrodes to generate intense surface fringe electric fields moving in a given direction across the surface. The intense surface fringe electric fields exert strong electrical forces on the polar molecules of the fluid. These forces move the fluid in specific directions dependent on the geometry of the electrode array and the manner in which voltage is applied to each electrode within an array of electrodes.



INTERNATIONAL SEARCH REPORT

International application No. PCT/US2007/023301

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - HOU 7/24 (2008.04)

USPC - 315/111.01

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) USPTO pubWEST System (US, USPG-PUB, EPO, DERWENT), MicroPatent, IP.com, DialogPro, Google Patents

C DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim N			
Υ	JP 6-1205 (HARADA et al) 11 January 1994 (11.01.1994) abstract, Figs. 1-3 1-30			
Y	US 2005/0200289 A1 (KRICHTAFOVITCH) 15 September 2005 (15 09.2005) entire document 1-30			
Y	US 4,896,174 A (STEARNS) 23 January 1990 (23.01.1990) entire document 3, 12			
Y	US 2006/0102525 A1 (VOLKEL et al) 18 May 2006 (18.05.2006) entire document 7			
Y	US 2006/0098290 A1 (FERNANDO et al) 11 May 2006 (11.05.2006) entire document 8, 17, 27			
Y	US 6,596,143 B1 (WANG et al) 22 July 2003 (22.07.2003) entire document	13, 23		
Y	US 2006/0226266 A1 (RUSSELL et al) 12 October 2006 (12.10.2006) entire document	14, 24		

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