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(72) Inventor: **Ong, Hiap L.**
Diamond Bar, CA 91765 (US)

(74) Representative: **Lang, Christian et al**
LangRaible GbR
Patent- und Rechtsanwälte
Herzog-Wilhelm-Straße 22
80331 München (DE)

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(71) Applicant: **Kyoritsu Optonics Co. Ltd.**
Lingya District, Kaohsiung City (TW)

(54) **Pixels using associated dot polarity for multi-domain vertical alignment liquid crystal displays**

(57) A multi-domain vertical alignment liquid crystal display that does not require physical features on the substrate (such as protrusions and ITO slits) is disclosed. Each pixel of the MVA LCD is subdivided into color components, which are further divided into color dots. The device component areas, i.e. where switching elements and storage capacitors are located, are converted to associated dots by adding an electrode that can be electrically biased. The voltage polarity of the color dots and associated dots are arranged so that fringe fields in each color dot causes multiple liquid crystal domains in each color dot. Specifically, the color dots and associated dots of a pixel are arranged so that associated dots have opposite polarity as compared to neighboring color dots.

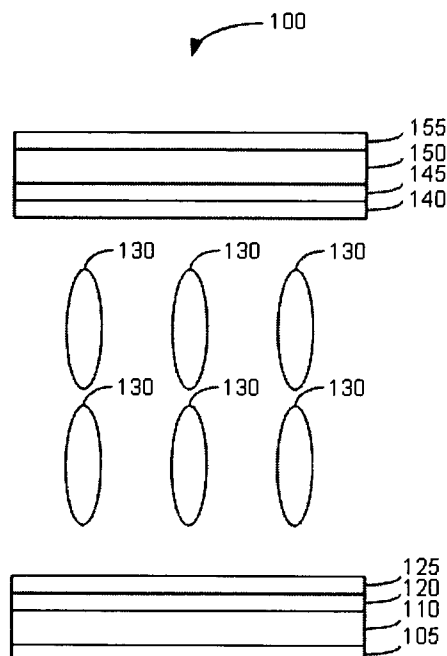


FIG. 1(a)

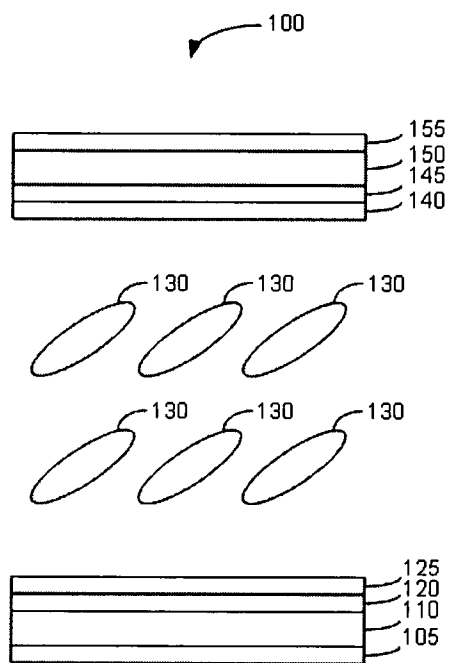


FIG. 1(b)

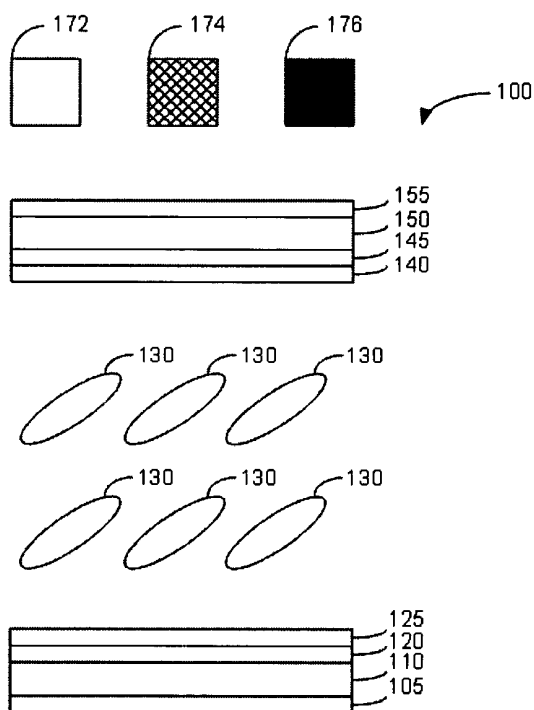


FIG. 1(c)



EUROPEAN SEARCH REPORT

Application Number
EP 08 10 3123

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2007/058122 A1 (ONG HIAP L [US]) 15 March 2007 (2007-03-15) * paragraphs [0039] - [0043]; figures 4,5 *	1-177	INV. G09G3/36 G02F1/13
A	US 2005/068281 A1 (SHIN KYONG-JU [KR] ET AL) 31 March 2005 (2005-03-31) * the whole document *	1-177	
A	US 2006/238687 A1 (SU JENN-JIA [TW]) 26 October 2006 (2006-10-26) * the whole document *	1-177	
			TECHNICAL FIELDS SEARCHED (IPC)
			G09G G02F
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 18 March 2010	Examiner Kunze, Holger
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 08 10 3123

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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18-03-2010

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		US 2009316099 A1	24-12-2009

专利名称(译)	使用相关点极性的像素用于多域垂直配向液晶显示器		
公开(公告)号	EP1995717A3	公开(公告)日	2010-04-28
申请号	EP2008103123	申请日	2008-03-28
申请(专利权)人(译)	KYORITSU OPTRONICS CO.LTD.		
当前申请(专利权)人(译)	KYORITSU OPTRONICS CO.LTD.		
[标]发明人	ONG HIAP L		
发明人	ONG, HIAP L.		
IPC分类号	G09G3/36 G02F1/13		
CPC分类号	G02F1/134336 G02F1/133707 G02F1/1393 G02F2001/134345 G09G3/3614 G09G3/3648 G09G2300/0452 G09G2320/0242		
代理机构(译)	LANG , CHRISTIAN		
优先权	11/751454 2007-05-21 US		
其他公开文献	EP1995717A2		
外部链接	Espacenet		

摘要(译)

公开了一种多畴垂直配向液晶显示器，其不需要基板上的物理特征（例如突起和ITO狭缝）。MVA LCD的每个像素被细分为颜色分量，其进一步分为彩色点。器件组件区域，即开关元件和存储电容器所在的区域，通过添加可以电偏置的电极被转换成相关的点。设置彩色点和相关点的电压极性，使得每个彩色点中的边缘场在每个彩色点中产生多个液晶畴。具体地，排列像素的彩色点和相关点，使得相关的点与相邻的彩色点相比具有相反的极性。

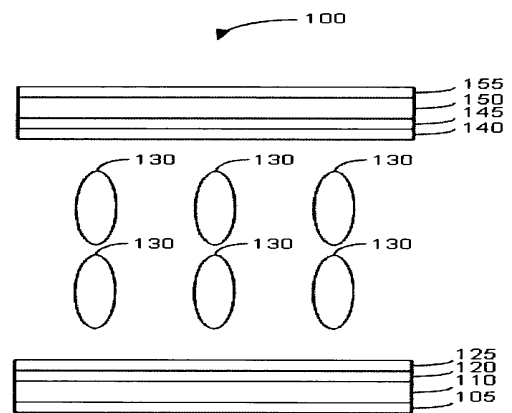


FIG. 1(a)