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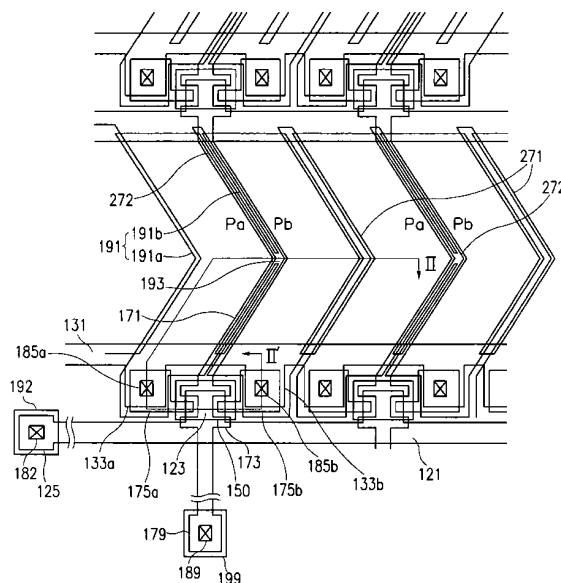
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(54) **LCD - TFT array with electrode cutouts for multi-domain pixels**

(57) A liquid crystal display includes a first substrate including a first electrode and a second electrode formed thereon, a second substrate including a third electrode formed thereon, wherein the second substrate is spaced apart from the first substrate by a gap, and at least one cutout formed in the third electrode, wherein the at least one cutout is aligned with a space between

the first and second electrodes. The liquid crystal molecules may be in the vertically aligned mode. The cutout (or orientation control window) divides the pixel into domains. The pixel electrodes may be chevron-shaped and the datalines may be arranged in a zigzag fashion. Instead of cutouts, protrusions may be employed to improve the viewing angle of the display.

FIG.1





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A			
			TECHNICAL FIELDS SEARCHED (Int.Cl.7) G02F
The present search report has been drawn up for all claims			
5	Place of search Munich	Date of completion of the search 14 June 2005	Examiner Thomas, K
CATEGORY OF CITED DOCUMENTS		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	
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			

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 14 June 2005	Examiner Thomas, K
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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Application Number
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
Munich	14 June 2005	Thomas, K	
CATEGORY OF CITED DOCUMENTS		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	
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			

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**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing more than ten claims.

- Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-27, 41

A liquid crystal display in which a cutout in an electrode on an upper substrate electrode is arranged to lie over and along a space between two electrodes on the lower substrate.

2. claims: 28-39, 42

An active matrix liquid crystal display wherein a dual drain transistor is arranged so that the drain electrodes are located symmetrically on either side of the gate electrode.

3. claim: 40

A method of applying voltages to two pixel electrodes on a first and a common electrode on a second substrate in an LCD to generate a desired electric field between the two pixel electrodes.

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ON EUROPEAN PATENT APPLICATION NO.**

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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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专利名称(译)	LCD - 具有用于多域像素的电极切口的TFT阵列		
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[标]申请(专利权)人(译)	三星电子株式会社		
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发明人	KIM, DONG-GYU KIM, SANG-SOO		
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CPC分类号	G02F1/133707 G02F1/134309 G02F1/136286 G02F2001/13606		
优先权	1020030031841 2003-05-20 KR		
其他公开文献	EP1480070B1 EP1480070A2		
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摘要(译)

一种液晶显示器，包括：第一基板，包括形成在其上的第一电极和第二电极；第二基板，包括形成在其上的第三电极；其中，第二基板通过间隙与第一基板间隔开，并且形成至少一个切口在第三电极中，其中至少一个切口与第一和第二电极之间的空间对齐。液晶分子可以处于垂直对准模式。剪切（或方向控制窗口）将像素划分为域。像素电极可以是人字形，并且数据线可以以Z字形方式排列。代替切口，可以采用突起来改善显示器的视角。

FIG. 1

