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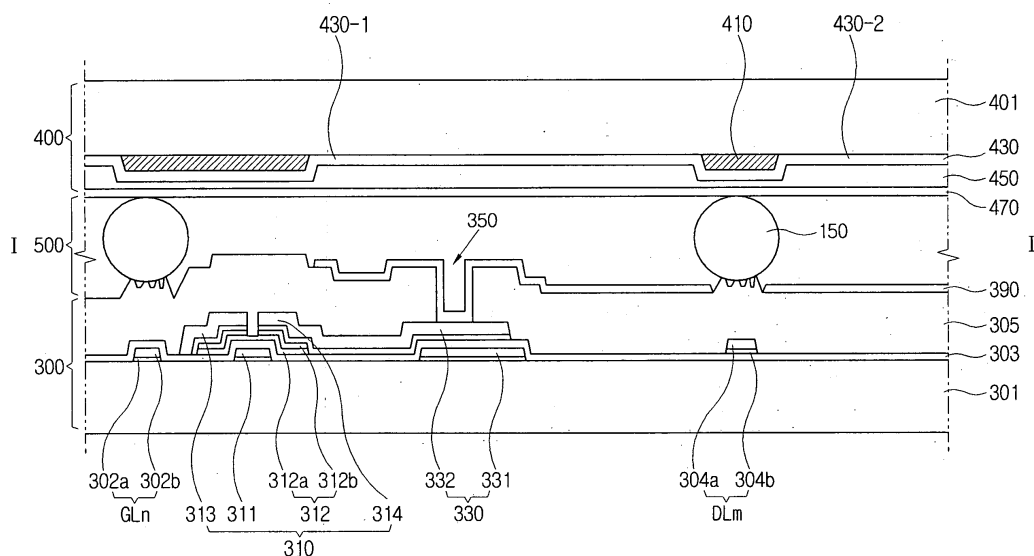
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(54) **Spacer spraying method and liquid crystal display manufactured by the same**

(57) A display device includes an array substrate (300), which includes a plurality of gate wires (GL), a plurality of data wires (DL), which cross the gate wires, and a plurality of pixel electrodes (390), which are defined by the gate wires and the data wires; a counter substrate

(400), which includes a common electrode (470) formed corresponding to the pixel electrodes; and a spacer (150), which maintains a gap between the array substrate and the counter substrate. The array substrate includes a pattern (306) that accommodates the spacer on the gate wires.

FIG. 4





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EUROPEAN SEARCH REPORT

Application Number
EP 07 01 6075

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2003/214621 A1 (KIM JEONG HYUN [KR] ET AL) 20 November 2003 (2003-11-20) * paragraphs [0005], [0046] - [0053], [0063], [0071], [0075], [0076] * * figures 6,11,13 *	1-5	INV. G02F1/1339
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Y	----- -/--	15,18	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 2 April 2008	Examiner Hauser, Markus
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)



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Application Number
EP 07 01 6075

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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Y	-----	15,18	
X	JP 05 061052 A (STANLEY ELECTRIC CO LTD) 12 March 1993 (1993-03-12) * abstract * * figures 1,4 *	12-14, 16,17	
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
Place of search		Date of completion of the search	Examiner
Munich		2 April 2008	Hauser, Markus
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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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 present supplementary 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 (Rule 164 (1) EPC).



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**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

EP 07 01 6075

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: 1-11

A display device with a pattern that accomodates the spacer and which is disposed on at least one of the gate wires and the data wires.

2. claims: 12-18

A method for manufacturing a display device comprising the steps of applying a voltage to the array substrate and spraying a charged spacer over the array substrate.

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

EP 07 01 6075

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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02-04-2008

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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

专利名称(译)	间隔物喷涂方法和由其制造的液晶显示器		
公开(公告)号	EP1898253A3	公开(公告)日	2008-05-14
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[标]申请(专利权)人(译)	三星电子株式会社		
申请(专利权)人(译)	SAMSUNG ELECTRONICS CO. , LTD.		
当前申请(专利权)人(译)	SAMSUNG ELECTRONICS CO. , LTD.		
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发明人	HAN, HYE-RHEE JOO, YOUNG-KUIL		
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代理机构(译)	DR.威猛和合作伙伴		
优先权	1020060086745 2006-09-08 KR		
其他公开文献	EP1898253B1 EP1898253A2		
外部链接	Espacenet		

摘要(译)

一种显示装置，包括：阵列基板（300），包括多条栅极线（GL）；多条数据线（DL），其与栅极线交叉；以及多个像素电极（390），其被限定通过栅极线和数据线；对向基板（400），包括对应于像素电极形成的公共电极（470）；和间隔物（150），其保持阵列基板和对向基板之间的间隙。阵列基板包括图案（306），其在栅极线上容纳间隔物。

FIG. 4

