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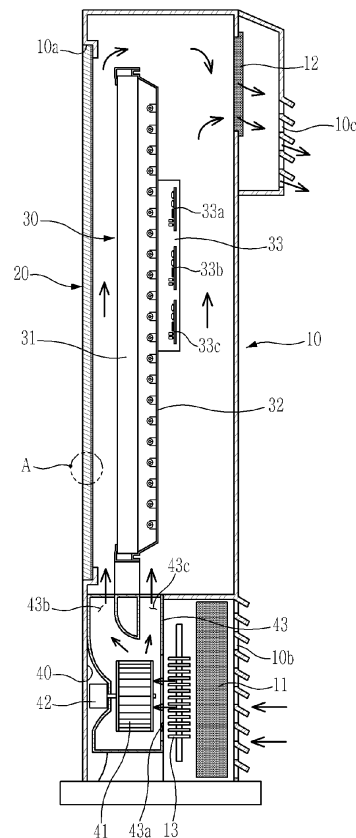
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(54) **Outdoor display apparatus**

(57) An outdoor display apparatus includes a housing (10) having an opening (10a), an inlet port (10b) and an outlet port (10c), a transparent member (20) disposed in the opening, a liquid crystal display panel module (30) disposed in the housing so that the liquid crystal display panel module is spaced from the transparent member to define a gap therebetween, the liquid crystal display panel module being provided at a front thereof with a liquid crystal display panel (31) to display an image, a circuit (33) disposed at a rear of the liquid crystal display panel module, an optical film (21,22) disposed inside the transparent member (20) at a position corresponding to the liquid crystal display panel of the liquid crystal display panel module, and an air circulation device (40) to distribute air introduced through the inlet port so that the distributed air passes through the gap between the transparent member and the liquid crystal display panel and through the circuit and is discharged through the outlet port.

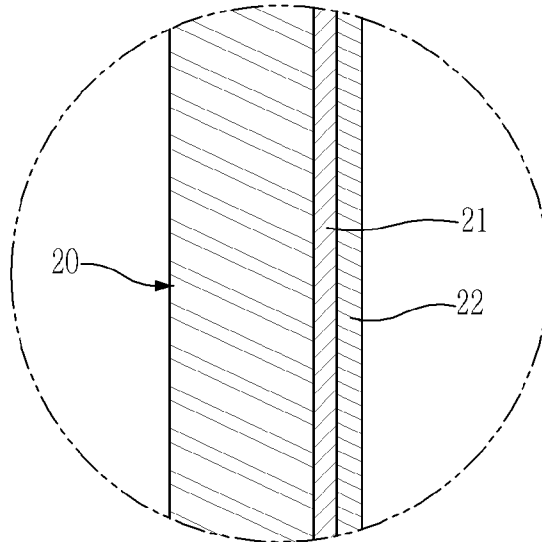
The optical film comprises a linear polariser (21) and a 1/4 wavelength plate (22) for preventing the contrast being lowered by ambient light.

FIG. 2



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FIG. 3





EUROPEAN SEARCH REPORT

Application Number
EP 12 15 2428

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	EP 2 124 091 A1 (SAMSUNG ELECTRONICS CO LTD [KR]) 25 November 2009 (2009-11-25)	1-3,8,10	INV. G02F1/1335
Y	* paragraphs [0001], [0036], [0045] - [0048], [0055] * * figure 2 *	4,5,7	G02F1/13363 H05K7/20
Y	----- WO 00/41030 A1 (HONEYWELL INC [US]) 13 July 2000 (2000-07-13) * abstract * * page 3, line 19 - line 23 * * page 6, line 7 - line 32 * * figure 3 * -----	4,5,7	ADD. G02F1/133
			TECHNICAL FIELDS SEARCHED (IPC)
			G02F H05K
-The present search report has been drawn up for all claims-			
Place of search Munich		Date of completion of the search 21 May 2012	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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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

- Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due 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 those claims for which no payment was due.

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:
1-5, 7, 8, 10
- 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).



**LACK OF UNITY OF INVENTION
SHEET B**

Application Number
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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: 1-5, 7, 8, 10

Outdoor display apparatus comprising a housing with liquid crystal display module and a front window, characterised by means to prevent the contrast of the displayed image from being lowered by sunlight.

2. claims: 6, 14

Outdoor display apparatus comprising a housing with liquid crystal display module and a front window, characterised by means for preventing dust from sticking to the transparent member or to the liquid crystal display panel.

3. claims: 9, 11-13

Outdoor display apparatus comprising a housing with liquid crystal display module and a front window, characterised by means relating to cooling of the apparatus by an air stream

**ANNEX TO THE EUROPEAN SEARCH REPORT
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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

21-05-2012

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 2124091	A1	25-11-2009	NONE

WO 0041030	A1	13-07-2000	EP 1141771 A1 10-10-2001
			JP 4745501 B2 10-08-2011
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			WO 0041030 A1 13-07-2000

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

专利名称(译)	户外显示装置		
公开(公告)号	EP2482123A3	公开(公告)日	2012-10-31
申请号	EP2012152428	申请日	2012-01-25
[标]申请(专利权)人(译)	三星电子株式会社		
申请(专利权)人(译)	三星电子有限公司		
当前申请(专利权)人(译)	SAMSUNG ELECTRONICS CO. , LTD.		
[标]发明人	CHO JIN HYUN		
发明人	CHO, JIN HYUN		
IPC分类号	G02F1/1335 G02F1/13363 H05K7/20 G02F1/133		
CPC分类号	G02F1/133385 G02F1/133308 G02F1/133502 G02F1/133528 G02F1/13363 G02F2001/133331 G02F2001/133531 G02F2001/133541 G02F2001/133562 G02F2001/133638 G02F2202/22 H05K7/20972		
审查员(译)	HAUSER, MARKUS		
优先权	1020110010313 2011-02-01 KR		
其他公开文献	EP2482123B1 EP2482123A2		
外部链接	Espacenet		

摘要(译)

一种户外显示装置，包括具有开口（10a）的壳体（10），入口（10b）和出口（10c），设置在开口中的透明构件（20），液晶显示面板模块（30）设置在壳体内，使得液晶显示面板模块与透明构件间隔开以在它们之间形成间隙，液晶显示面板模块在其前面设置有液晶显示面板（31）以显示图像，设置在液晶显示面板模块后部的电路（33），设置在透明构件（20）内部与液晶显示面板的液晶显示面板对应的位置的光学膜（21,22）模块和空气循环装置（40），用于分配通过入口引入的空气，使得分配的空气穿过透明构件和液晶显示板之间的间隙并通过电路并被排出。呃出口。光学膜包括线性偏振器（21）和1/4波长板（22），用于防止对比度被环境光降低。

