



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
24.11.2010 Bulletin 2010/47

(51) Int Cl.:
G02F 1/1335^(2006.01) G02F 1/13363^(2006.01)

(43) Date of publication A2:
08.04.2009 Bulletin 2009/15

(21) Application number: **08016804.0**

(22) Date of filing: **24.09.2008**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR
Designated Extension States:
AL BA MK RS

- **Ishibashi, Kuniaki**
Ibaraki-shi
Osaka 567-8680 (JP)
- **Nakata, Mie**
Ibaraki-shi
Osaka 567-8680 (JP)
- **Takemoto, Hiroyuki**
Ibaraki-shi
Osaka 567-8680 (JP)
- **Katami, Hirofumi**
Ibaraki-shi
Osaka 567-8680 (JP)

(30) Priority: **05.10.2007 JP 2007262278**

(71) Applicant: **Nitto Denko Corporation**
Ibaraki-shi,
Osaka 567-8680 (JP)

(72) Inventors:
• **Maezawa, Shohei**
Ibaraki-shi
Osaka 567-8680 (JP)

(74) Representative: **Grünecker, Kinkeldey, Stockmair & Schwanhäusser**
Anwaltssozietät
Leopoldstrasse 4
80802 München (DE)

(54) **Liquid crystal panel and liquid crystal display device**

(57) A liquid crystal panel 100 of the present invention comprises a liquid crystal cell 30, a first polarizing plate 10 disposed on a visible side of the liquid crystal cell and including a first polarizer 11, and, a second polarizing plate 20 disposed on a side opposite to the visible side of the liquid crystal cell and including a second polarizer 22. one polarizing plate of the first polarizing plate

and the second polarizing plate is provided with a first retardation layer 12 which is disposed between the liquid crystal cell and one polarizer of the first polarizer and the second polarizer, and whose refractive index ellipsoid satisfies a relationship of $n_z > n_x = n_y$, and, a transmittance of the second polarizing plate is larger than a transmittance of the first polarizing plate.

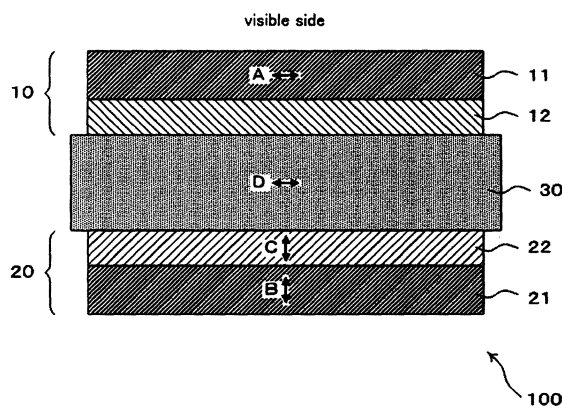


Fig. 1A

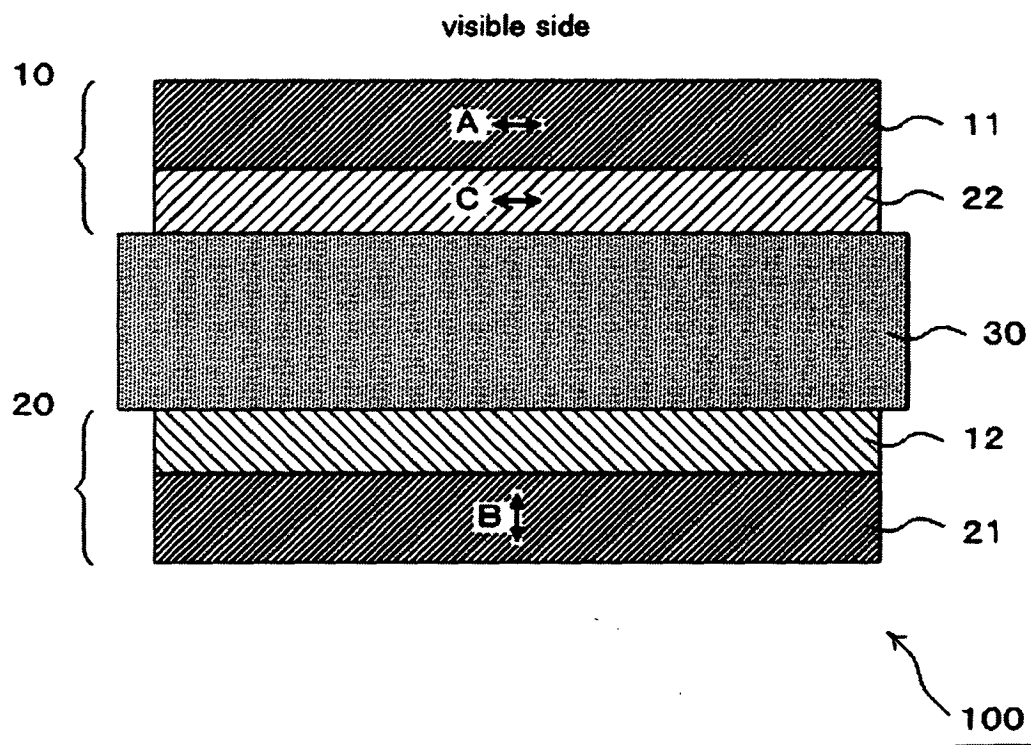


Fig. 1B



EUROPEAN SEARCH REPORT

Application Number
EP 08 01 6804

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	WO 2006/100901 A1 (NITTO DENKO CORP [JP]; YODA KENJI [JP]; YANO SHUUJI [JP]; HAYASHI MASA) 28 September 2006 (2006-09-28) * figures 1, 2 *	1-15	INV. G02F1/1335 G02F1/13363
Y,P	& US 2007/279553 A1 (YODA KENJI [JP] ET AL) 6 December 2007 (2007-12-06) * paragraph [0069] * * paragraph [0102] * * paragraph [0191] * * figures 1,2 *	1-15	
Y	----- JP 10 221684 A (CANON KK) 21 August 1998 (1998-08-21) * abstract * * paragraph [0008] * * paragraph [0036] *	1-15	
A	----- US 2004/212885 A1 (MIZUSHIMA HIROAKI [JP] ET AL) 28 October 2004 (2004-10-28) * paragraph [0042] - paragraph [0045] *	7-9	
A	----- POCHI YEH ET AL: "BIREFRINGENT OPTICAL COMPENSATORS FOR TN-LCDS" PROCEEDINGS OF THE INTERNATIONAL SOCIETY FOR OPTICAL ENGINEERING (SPIE), SPIE, USA LNKD- DOI:10.1117/12.311070, vol. 3421, 1 July 1998 (1998-07-01), pages 224-235, XP000904688 ISSN: 0277-786X * the whole document *	1-15	
A	----- KR 2006 0051547 A (FUJI PHOTO FILM CO LTD [JP]) 19 May 2006 (2006-05-19) * table 3 *	1	TECHNICAL FIELDS SEARCHED (IPC) G02F
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 7 October 2010	Examiner Boubal, François
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	

 2
EPO FORM 1503 03.82 (P04C01)

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

EP 08 01 6804

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.

07-10-2010

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2006100901 A1	28-09-2006	CN 1969226 A JP 2006267625 A US 2007279553 A1	23-05-2007 05-10-2006 06-12-2007
JP 10221684 A	21-08-1998	NONE	
US 2004212885 A1	28-10-2004	CN 1550797 A JP 3957700 B2 JP 2004341515 A KR 20040093046 A TW 261119 B	01-12-2004 15-08-2007 02-12-2004 04-11-2004 01-09-2006
KR 20060051547 A	19-05-2006	JP 2006091369 A	06-04-2006

专利名称(译)	液晶面板和液晶显示装置		
公开(公告)号	EP2045651A3	公开(公告)日	2010-11-24
申请号	EP2008016804	申请日	2008-09-24
[标]申请(专利权)人(译)	日东电工株式会社		
申请(专利权)人(译)	日东电工株式会社		
当前申请(专利权)人(译)	日东电工株式会社		
[标]发明人	MAEZAWA SHOHEI ISHIBASHI KUNIAKI NAKATA MIE TAKEMOTO HIROYUKI KATAMI HIROFUMI		
发明人	MAEZAWA, SHOHEI ISHIBASHI, KUNIAKI NAKATA, MIE TAKEMOTO, HIROYUKI KATAMI, HIROFUMI		
IPC分类号	G02F1/1335 G02F1/13363		
CPC分类号	G02F1/133634 G02F1/133528		
优先权	2007262278 2007-10-05 JP		
其他公开文献	EP2045651A2		
外部链接	Espacenet		

摘要(译)

本发明的液晶面板100包括液晶单元30，设置在液晶单元的可见侧并包括第一偏振器11的第一偏振板10，以及设置在相对侧的第二偏振板20液晶单元的可见侧包括第二偏振器22.第一偏振板和第二偏振板的一个偏振板设置有第一延迟层12，第一延迟层12设置在液晶单元和一个偏振器之间。第一偏振片和第二偏振片，其折射率椭圆满足 $n_z > n_x = n_y$ 的关系，并且第二偏振片的透射率大于第一偏振片的透射率。

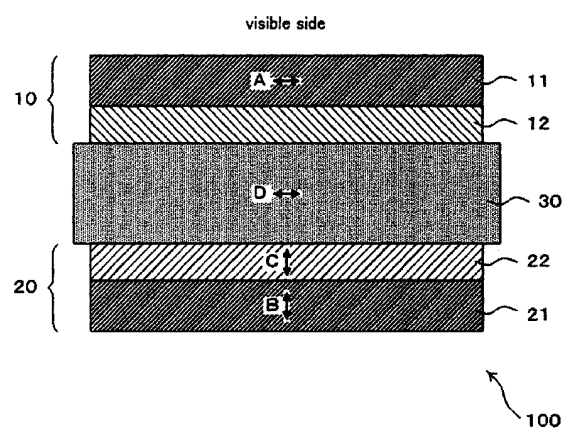


Fig. 1A