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(54) **Liquid crystal display device**

(57) A liquid crystal display device comprises a pair of substrates (101, 101') whose spacing is determined by spacers (1412, 1711) placed in a non-displaying region, a liquid crystal layer (106) filled in the space between said pair of substrates, a set of electrodes (102, 103) formed on the surface of one of the substrates of said pair of substrates for applying an electric field to said liquid crystal layer, and a pair of optical polarizers (109, 109') placed so that they enclose said liquid crystal layer and with their axes of polarization almost at right angles to each other. The liquid crystal layer contains 40% or more weight percentage or 100% or less weight percentage of a constituent component with a dielectric anisotropy of $\Delta\epsilon \leq 1$, and the directions of controlled orientation of liquid crystal molecules at the two surfaces between said liquid crystal layer and said pair of substrates is almost parallel. The axis of polarization of one of the polarizers is almost aligned with the direction of controlled orientation of liquid crystal molecules at said surfaces.

FIG. 1a

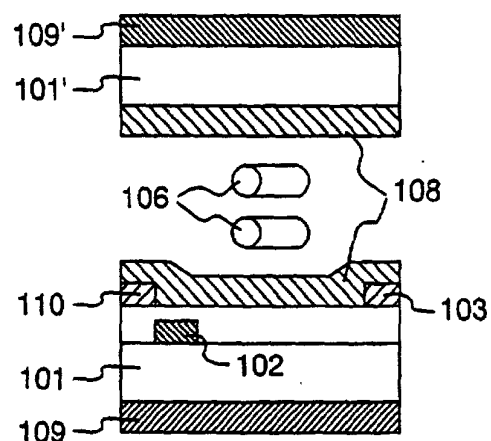


FIG. 1b

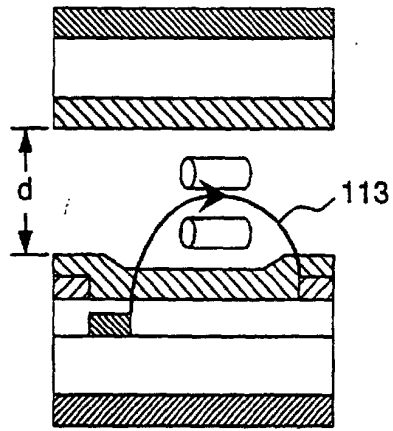


FIG. 1c

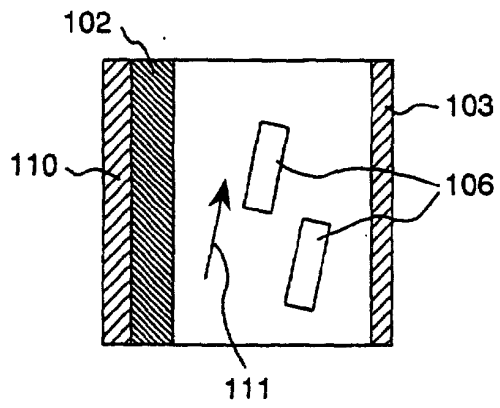
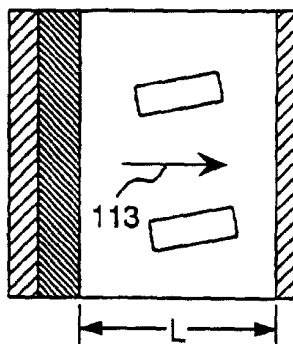


FIG. 1d





European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 00 10 3424

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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 2 December 2003	Examiner Petitpierre, 0
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
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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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02-12-2003

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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)	液晶显示装置		
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[标]申请(专利权)人(译)	株式会社日立制作所		
申请(专利权)人(译)	HITACHI, LTD.		
当前申请(专利权)人(译)	日立显示器有限公司. 松下液晶显示CO., LTD.		
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CPC分类号	G02F1/134363 G02F1/1339 Y10T428/10 Y10T428/1036		
优先权	1999048594 1999-02-25 JP		
其他公开文献	EP1033606B1 EP1033606A2		
外部链接	Espacenet		

摘要(译)

液晶显示装置包括一对基板 (101,101')，其间隔由放在非显示区域中的间隔物 (1412,1711) 确定，液晶层 (106) 填充在所述一对基板之间的空间中。基板，一组电极 (102,103)，形成在所述一对基板的一个基板的表面上，用于向所述液晶层施加电场，以及一对光学偏振器 (109,109')，所述基板它们包围所述液晶层并且它们的偏振轴几乎彼此成直角。液晶层含有40%或更多的重量百分比或100%或更少的重量百分比的介电各向异性 $\Delta\epsilon \leq 1$ 的构成组分，以及所述液晶层之间的两个表面上的液晶分子的受控取向的方向并且所述一对基板几乎平行。其中一个偏振器的偏振轴几乎与所述表面上液晶分子的受控取向方向一致。

