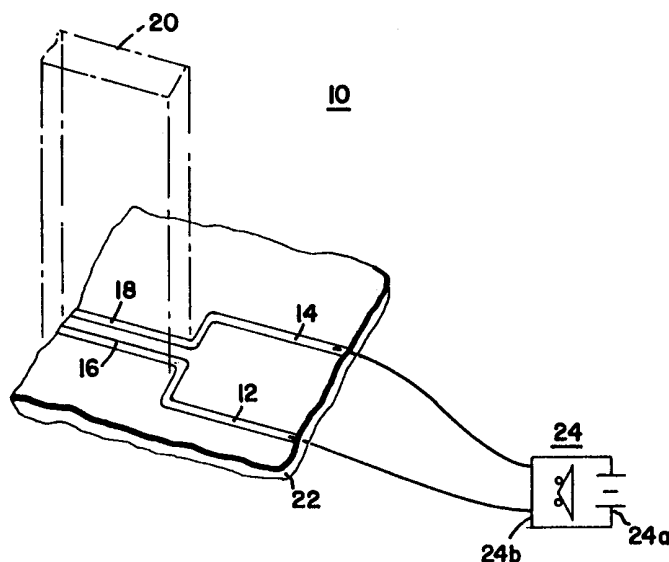


INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification ⁶ : H01J 1/62, B05D 5/06, G09G 3/22</p>	<p>A3</p>	<p>(11) International Publication Number: WO 99/30304</p> <p>(43) International Publication Date: 17 June 1999 (17.06.99)</p>
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(54) Title: DISPLAY DEVICE AND METHOD THEREFOR



(57) Abstract

An electroluminescent display (10) includes thin conductive strips on a phosphor-deposited area (20). One aspect of the invention is directed to a device including a dielectric carrier (22) supporting a first conductive bus (12) connecting to first conductors (16) and a second conductive bus (14) connecting to second conductors (18). The first and the second conductors are arranged in close proximity to one another, so that a phosphor based carrier can be located therebetween to permit an electric field set up by voltage applied between the first and the second conductors to generate light via the phosphor. A dielectric layer disposed between the conductors enhances the brightness of the light generated. The electroluminescent display can be incorporated as a part of mirror or liquid crystal device.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/26111

A. CLASSIFICATION OF SUBJECT MATTER IPC(6) :HOI1 1/62; B05D 5/06;; G09G 3/22 US CL : 313/510; 427/64; 345/76 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) U.S. : 313/510; 427/64; 345/76, 77, 78, 79, 80; 340/825.52, 825.72		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) APS		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----- Y	JP 06 104087 A (YASUSHI ET AL) 15 APRIL 1994, see figures 1,3, 5, 7, 9, Abstract, and the attached translation page 6, line 8 through page 7 line 7.	1-3, 8, 11, 18-22, 32, 33 ----- 4-7, 9, 10, 12-17, 23-31, 34
Y	DE 3802317A1 A (GERHARD BECK ET AL.) 03 AUGUST 1989, see the attached english translation page 2, line 13 through page 3, line 15, and figures 1-3.	4-7, 23, 24
Y	US 5,565,733 A (KRAFCIK ET AL) 15 OCTOBER 1996, see column 4, line 34 through column 5, line 47, and figures 1 and 2.	9, 10, 12-17, 34
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* *A* *B* *L* *O* *P*	Special categories of cited documents: document defining the general state of the art which is not considered to be of particular relevance earlier document published on or after the international filing date document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) document referring to an oral disclosure, use, exhibition or other means document published prior to the international filing date but later than the priority date claimed	*T* *X* *Y* *&*
Date of the actual completion of the international search 02 APRIL 1999		Date of mailing of the international search report 22 JUN 1999
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230		Authorized officer Amr Awad Joni Hill Telephone No. (703) 308-8485

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US98/26111

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,574,327 A (CAMMACK et al) 12 NOVEMBER 1996, see column 1, line 35 through line 4, line 51.	25-31

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/26111**Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)**

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Please See Extra Sheet.

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
 No protest accompanied the payment of additional search fees.

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING

This ISA found multiple inventions as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

- I. Claims 1-19, drawn to an Electroluminescent display apparatus, and in particular to the way in which the electroluminescent is energized.
- II. Claims 20-24, 29-31, and 34, drawn to a method of manufacturing an electroluminescent display device.
- III. Claims 25-28, and 32-33, drawn to an Electroluminescent apparatus, and in particular to the materials used to illuminate the electroluminescent.

The inventions listed as Groups I, II, and III do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

Claims in group I are directed to an Electroluminescent display apparatus and in particular to the way in which the electroluminescent is energized; US classification 345/80.

Claims in group II are directed to a method of manufacturing an electroluminescent display; US classification 427/64.

Claims in group NO. III are directed to an Electroluminescent apparatus and in particular to the material used to illuminate the display; US classification 313/502.