

Notification of Reasons for Refusal

Patent Application No: JP 2002-348622
Initiation Date: September 5, 2007
Patent Examiner: GOTO, Ryoji 9610 2G00
Patent Applicant Agent: KAMIYASAGI, Masataka (and 1 other)
Applicable Provisions: Article 29, Paragraph 1; Article 29, Paragraph 2

The present application must be refused for the following reason(s). Any opinions pertaining hereto should be submitted in writing within 60 days of the date of transmittal of this notification.

Reasons

1. The inventions related to the following claims of the present application are inventions recited in the publications below, which had been distributed in Japan or abroad prior to the application or are inventions that became usable through electronic communications circuits prior to the application, and therefore cannot receive a patent according to the stipulations of Article 29, Paragraph 1, Item 3 of the Japan Patent Law.
2. The inventions related to the following claims of the present application could have been easily invented by a person with ordinary knowledge of technology in the field to which the invention belongs based on the inventions recited in the publications below, which had been distributed in Japan or abroad prior to the application or on inventions that became usable through electronic communications circuits prior to the application, and therefore cannot receive a patent according to the stipulations of Article 29, Paragraph 2 of the Japan Patent Law.

Note

Cited References

1. Japanese Unexamined Patent Application Publication H11-18564 (referencing [0029], [0030], [0036], [FIG. 1], [FIG. 2], and [FIG. 5])
2. Japanese Unexamined Patent Application Publication 2002-278504 (referencing [0006] and [FIG. 5])

Claims: 1 through 5, 7, 10, 11, 13, 16 through 18, 20, 23, 24, 26, 27, 29, 32, 33

Reasons: 1, 2

Document: 1

Remarks:

The inventions in claims 1 through 5, 7, 10, 11, 13, 16 through 18, 20, 23, 24, 26, 27, 29, 32, and 33 of the present application are described in Document 1.
Moreover, the inventions in claims 1 through 5, 7, 10, 11, 13, 16 through 18, 20, 23, 24, 26, 27, 29, 32, and 33 of the present application could have been arrived at easily by person skilled in the art based on the inventions of Document 1.

Claims: 6, 19, 28

Reason: 2

Document: 1

Remarks:

The provision of a reflection preventing member in a non-display region is a common practice in the technical field of "display devices" to the extent that no references need be cited.

Claims: 12, 14, 15, 25

Reason: 2

Cited References: 1 and 2

Remarks:

In the technical field of "display devices," "structuring a pixel circuit for an active matrix organic EL display device from a first transistor that conducts to provide a data signal; a capacitive element that holds, as an amount of electrical charge, the data signal that is supplied through the first transistor; and a second transistor, for which the conductive state is controlled based on the amount of electrical charge that is held in the capacitive element, for providing, to an aforementioned electro-optical element, an amount of current corresponding to the conductive state thereof" is a well-known technology, such as described in, for example, the Prior Art section of Document 2.

Note that, as a minor problem with the description, in claim 9 the description of "the aforementioned non-effective optical region is formed..." should probably be "... are formed in the aforementioned non-effective optical region. Claim 22 and claim 31 have the same problem.

< Claims for Which No Reason for Rejection Has Been Discovered >

At the present time, no reasons for refusal have been discovered for claims 8, 9, 21, 22, 30, and 31, regarding novelty and inventive step. Notification of reasons for rejection will be provided if reasons for rejection are identified.

Record of Prior Art Literature Search Results

- Fields searched: IPC G09F 9/00 - 9/46, G09G 3/00 - 3/38, H01L 27/32, 51/50, H05B 33/00 - 33/28
- Prior Art Literature
 - Japanese Unexamined Patent Application Publication 2001-356739
 - Japanese Unexamined Patent Application Publication 2001-109339
 - Japanese Unexamined Patent Application Publication H10-091094

This record of prior art literature search results does not constitute a reason for rejection.

For questions regarding this Notification of Reasons for Refusal, or to request an interview, please contact the following:

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[Patent]	2002-348622	[Date Received]	November 8, 2007	1
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[Title of Document]	Written Opinion
[File No.]	J009221801
[Filing Date]	November 8, 2007
[To]	Director of the Patent Office
[Case Descriptor]	
[Application No.]	JP2002-348622
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[Transmittal No.]	454463

[
Details of Written Opinion]

(1) Background

In the Notification of Reasons for Refusal drafted on September 5, 2007, there was a finding that the inventions of the present application cannot receive a patent due to Patent Act 29 (1) 3, citing Japanese Unexamined Patent Application Publication H11-185654 ("Document 1") and Japanese Unexamined Patent Application Publication 2002-278504 ("Document 2").

Moreover, it was deemed that the invention according to the present application could have been invented easily by one skilled in the art based on the same cited examples, and thus could not be patented due to the stipulations in Paragraph 2 of Chapter 29 of the Japan Patent Law.

However, the applicant does not agree with this finding, and submits the following written opinion after clarifying the invention of the present application through amending a portion of the description through a separate amendment with the same date.

(2) Details of the Invention in the Present Application

As described in the Scope of Patent Claims through the procedural amendment filed with the same date as this written opinion, the invention of the present application is:

"[Claim 1]

An electro-optical device wherein:

a plurality of first effective optical regions provided with a first electro-optical element,

a plurality of second effective optical regions provided with a second electro-optical element,

and

a plurality of non-effective optical regions wherein no electro-optical element is provided

are disposed on a substrate, wherein:

each of the plurality of non-effective optical regions is arranged interposed between two of the plurality of first effective optical regions and also arranged interposed between two of the second effective optical regions; and

of the pluralities of first effective optical regions and second effective optical regions, in at least one first effective optical region and second effective optical region, an electronic circuit is formed for driving an aforementioned electro-optical element that is formed in the other first effective optical region and second effective optical region.

[Claim 2]

An electro-optical device wherein:

a plurality of first effective optical regions provided with a first electro-optical element,

a plurality of second effective optical regions provided with a second electro-optical element,
and

a plurality of non-effective optical regions wherein no electro-optical element is provided
are disposed on a substrate, wherein:

each of the plurality of non-effective optical regions is arranged interposed between two of the
plurality of first effective optical regions and also arranged interposed between two of the second
effective optical regions; and

in an aforementioned non-effective optical region, an electronic circuit is formed for driving an
aforementioned electro-optical element that is formed in at least one of the first effective optical
regions and the second effective optical regions.

[Claim 3]

An electro-optical device set forth in claim 1 or 2, wherein:

the first effective optical regions or the second effective optical regions are not disposed
adjacent to each other.

[Claim 4]

An electro-optical device set forth in any one of claims 1 through 3, wherein:

a display region is formed from an aforementioned first effective optical, and aforementioned
second effective, and an aforementioned non-effective optical region, where a layout pitch is
equal in a row direction and a column direction of the display region between the plurality of first
effective optical regions.

[Claim 5]

An electro-optical device set forth in any one of claims 1 through 3, wherein:

an aforementioned first effective optical region and an aforementioned second effective optical
region have identical shapes.

[Claim 6]

An electro-optical device set forth in any one of claims 1 through 4, wherein:

a reflection preventing member is formed in an aforementioned non-effective optical region.

[Claim 7]

An electro-optical device set forth in any one of claims 1 through 6, wherein:

individual pixels are formed arranged corresponding to intersecting portions between a plurality
of scan lines and a plurality of data lines; and

an aforementioned electronic circuit drives an aforementioned electro-optical element based on
a scan signal from an aforementioned scan line and a data signal from an aforementioned data
line.

[Claim 8]

An electro-optical device set forth in claim 7, wherein:

the electronic circuit has:

a first transistor that conducts to provide a data signal;

a capacitive element that holds, as an amount of electrical charge, the data signal that is
supplied through the first transistor; and

a second transistor, for which the conductive state is controlled based on the amount of
electrical charge that is held in the capacitive element, for providing, to an aforementioned
electro-optical element, an amount of current corresponding to the conductive state thereof.

[Claim 9]

An electro-optical device set forth in any one of claims 1 through 8, wherein:

an aforementioned first electro-optical element and an aforementioned second electro-optical
element are each two electro-optical elements that are selected from electro-optical elements for
emitting green, blue, and red light.

[Claim 10]

An electro-optical device set forth in any one of claims 1 through 9, wherein:

an aforementioned first electro-optical element and an aforementioned second electro-optical element are each EL elements.

[Claim 11]

An electro-optical device set forth in claim 10, wherein:
in the EL element, a light-emitting layer is structured from an organic material.

[Claim 12]

An electro-optical device wherein:
a plurality of first light-emitting regions wherein a first light-emitting layer is formed,
a plurality of second light-emitting regions wherein a second light-emitting layer is formed, and
a plurality of non-light-emitting regions wherein no light-emitting layer is formed
are disposed on a substrate, wherein:
each of the plurality of non-light-emitting regions is arranged interposed between two of the plurality of first light-emitting regions and also arranged interposed between two of the second light-emitting regions; and
of the first light-emitting regions or second light-emitting regions, in at least one first light-emitting region or second light-emitting region, an electronic circuit is formed for controlling an aforementioned first light-emitting layer or second light-emitting layer that is formed in the other first light-emitting region or second light-emitting region.

[Claim 13]

An electro-optical device wherein:
a plurality of first light-emitting regions wherein a first light-emitting layer is formed,
a plurality of second light-emitting regions wherein a second light-emitting layer is formed, and
a plurality of non-light-emitting regions wherein no light-emitting layer is formed
are disposed on a substrate, wherein:
each of the plurality of non-light-emitting regions is arranged interposed between two of the plurality of first light-emitting regions and also arranged interposed between two of the second light-emitting regions; and
in an aforementioned non-effective light-emitting, an electronic circuit is formed for controlling an aforementioned first light-emitting layer or second light-emitting layer that is formed in at least one of the first light-emitting regions or the second light-emitting regions.

[Claim 14]

An electro-optical device set forth in claim 12 or 13, wherein:
the first light-emitting regions or the second light-emitting regions are not disposed adjacent to each other.

[Claim 15]

An electro-optical device set forth in any one of claims 12 through 14, wherein:
an aforementioned first light-emitting region and an aforementioned second light-emitting region have identical shapes.

[Claim 16]

An electro-optical device set forth in any one of claims 12 through 15, wherein:
a reflection preventing member is formed in an aforementioned non-light-emitting region.

[Claim 17]

An electro-optical device set forth in any one of claims 12 through 16, wherein:
individual pixels are formed arranged corresponding to intersecting portions between a plurality of scan lines and a plurality of data lines; and
an aforementioned electronic circuit of each of the pixels controls an aforementioned first light-emitting film or an aforementioned second light-emitting film based on a scan signal from an aforementioned scan line and a data signal from an aforementioned data line.

[Claim 18]

An electro-optical device set forth in any one of claims 12 through 17, wherein:

an aforementioned first light-emitting film and an aforementioned second light-emitting film are each two light-emitting films that are selected from light-emitting films for emitting green, blue, and red light.

[Claim 19]

An electro-optical device set forth in any one of claims 12 through 18, wherein:

an aforementioned first light-emitting film and an aforementioned second light-emitting film are each structured from an organic material.

[Claim 20]

An active matrix substrate wherein:

a plurality of first element forming regions wherein a first electro-optical element is formed,

a plurality of second element forming regions wherein a second electro-optical element is formed, and

a plurality of non-element forming regions wherein no electro-optical element is formed

are disposed on a substrate, wherein:

each of the plurality of non-element forming regions is arranged interposed between two of the plurality of first element forming regions and also arranged interposed between two of the second element forming regions; and

of the pluralities of first element forming regions and second element forming regions, in at least one first element forming region or second element forming region, an electronic circuit is formed for driving an aforementioned electro-optical element that is formed in the other first element forming region or second element forming region.

[Claim 21]

An active matrix substrate wherein:

a plurality of first element forming regions wherein a first electro-optical element is formed,

a plurality of second element forming regions wherein a second electro-optical element is formed, and

a plurality of non-element forming regions wherein no electro-optical element is formed

are disposed on a substrate, wherein:

each of the plurality of non-element forming regions is arranged interposed between two of the plurality of first element forming regions and also arranged interposed between two of the second element forming regions; and

in an aforementioned non-element forming region, an electronic circuit is formed for driving an aforementioned electro-optical element that is formed in at least one of the first element forming regions or the second element forming regions.

[Claim 22]

An active matrix substrate set forth in claim 20 or 21, wherein:

a reflection preventing member is formed in an aforementioned non-element forming region.

[Claim 23]

An electronic instrument, comprising:

an electro-optical device set forth in any one of claims 1 through 19.

[Claim 24]

An electronic instrument wherein is mounted an active matrix substrate set forth in any one of claims 20 through 22."

Given the invention of the present application, a plurality of effective optical regions, provided with electro-optical elements, are formed with non-effective optical regions, wherein electro-optical elements are not provided, interposed therebetween. Consequently, the individual electro-optical elements can be laid out uniformly in the row direction and column direction of the display. The result is the ability to reduce the visual anisotropy that is produced in the row direction and the column direction of the display panel portion, making it possible to suppress distortion of the image.

(3) Explanation of the Amendment and Foundation for the Amendment

The relationships between the individual claims prior to the amendment and the individual claims after the amendment for the inventions of the present application are as follows.

New Claim Numbers (Post-amendment) Pre-amendment Claim Numbers (At the Time of Filing)

1	3+8
2	3+9
3	4
4	None
5	5
6	6
7	11
8	12
9	13
10	14
11	15
12	16+21
13	16+22
14	17
15	18
16	19
17	23
18	24
19	25
20	27+30
21	27+31
22	28
23	32
24	33

Note that Claims 1, 2, 7, 8, 9, 10, 20, 21, 22, 26, 29, 30, and 31 from the time of the application have been eliminated.

Moreover, the amendments in the patent claims relating to the present application are based on the following descriptions in the Specification as filed initially, and thus no new matter is introduced.

The amendments in claims 1, 2, 12, 13, 20, and 21 added, respectively, claims 8, 9, 21, 22, 30, and 31, for which, at this time, there has been no notification of reasons for refusal, to claims 3, 3, 16, 16, 27, and 27, respectively, as initially filed, and are based on the descriptions in paragraphs [0017] through [0020] and [0099] through [0104] in the Specification as originally filed, and on FIG. 5. Additionally, the amendment in claim 4 is based on paragraphs [0095] and [0104] of the Specification as originally filed.

(4) Explanations of Cited Examples

Document 1 describes an image displaying device wherein a basic layout of two rows and two columns is formed through elements for displaying the three primary colors and one element that does not contribute to displaying an image, where, of the primary color display elements, the primary color display element that has the maximum brightness value and the primary color display element that has the second highest brightness value are arranged at opposite corners of the basic layout.

Document 2 discloses a display device of a self-illuminated type, comprising light-detecting elements for detecting light emitted from each of the light-emitting elements, so as to control, through the light-detecting elements, the amounts of light emitted by the light emitting elements.

Moreover, an example of a pixel circuit in an AM-type organic EL display is described in the Prior Art section of Document 2.

(5) Comparison of the Inventions according to the Present Application and the Cited Examples

As a point that is in common with the invention of the present application, Document 1 has a description of the formation of a two-column, two-row basic layout from three primary color display elements and one element that does not contribute to the image display. However, there is no disclosure whatsoever in Document 1 regarding the arrangement of electronic circuits, for driving the electro-optical elements, with respect to the effective optical regions and non-effective optical regions, which is a distinctive feature of the invention of the present application. Specifically, there is no disclosure whatsoever, nor even a suggestion, regarding the point that "of the pluralities of the first effective optical regions and second effective optical regions, in at least one first effective optical region and second effective optical region, an electronic circuit is formed for driving an aforementioned electro-optical element that is formed in the other first effective optical region and second effective optical region," as there is in claim 8, prior to the amendment, for which there has been no notification of reasons for refusal at the present time, nor the point that "in an aforementioned non-effective optical region, an electronic circuit is formed for driving an aforementioned electro-optical element that is formed in at least one of the first effective optical regions and the second effective optical regions," as in claim 9, prior to the amendment. Given the addition of the matter of the pre-amendment claim 8, for which, at the present point in time, there is no notification of reasons for refusal, to the pre-amendment claim 3, the structure is clearly different from that in document 1. Consequently, the stipulations in Patent Act 29 (3) 1 do not apply to post-amendment claim 1 of the invention in the present application. Through the same reasoning as in claim 1, the reasons for refusal have also been eliminated for post-amendment claim 2. Post-amendment claims 3 through 5, 7, 9, 12 through 15, 17, 18, 20, 21, 23, and 24 either include the principal matters of claim 1 or claim 2, for which the reasons for removal have been eliminated, or are dependent on those matters. Consequently, Patent Act 29 (1) 3 does not apply to any of those claims.

Next, Document 2 has a point in common with the invention of the present application in that it is a display device of an active matrix driving method. However, Document 2 is cited to provide an example of a pixel circuit of a display device of a self-illuminated type that uses an organic EL element, and there is no description whatsoever regarding, for example, the arrangement of the effective optical regions and non-effective optical regions, the arrangement of the electronic circuits for driving the electro-optical elements with respect to both regions, or the like, which are the distinctive features of the invention of the present application.

As described above, an invention that is achieved through combining the driving method disclosed in Document 2 with the layout of display elements described in Document 1 would be no more than an invention wherein a basic layout of two rows and two columns is formed through three primary color display elements and one element that does not contribute to an image display, in an organic EL display device of an active matrix display system. Even for a person of skill in the art, there would be considerable difficulty in conceiving of disposing, with respect to the effective optical regions and non-effective optical regions, electronic circuits for driving the electro-optical elements as in post-amendment claim 1 or claim 2 of the present invention.

Consequently, the stipulations of Patent Act 29 (2) do not apply to claim 1 or 2 of the invention as amended. Moreover, the stipulations of Patent Act 29 (2) do not apply to post-amendment claims 12, 13, 20, or 21 for the same reasons for which they do not apply to claim 1 or 2. Furthermore, because the other claims, as amended, are all dependent on the matters of these claims for which the reasons for refusal have been eliminated, the stipulations of Patent Act 29 (2) do not apply.

(6) Deficiencies in the Description

In regard to the finding by the examiner that there is a slight deficiency with the descriptions in claims 9, 22, and 31, as originally filed, amendments have been made regarding the indicated locations in the amendment that was submitted on the same day as this written opinion. (Post-amendment Claims 2, 13, and 21)

(7) Conclusion

As described above, we are confident that the inventions of the present application are patentable, with no applicable reasons for refusal. Thus we request that, upon re-examination, a patent be issued for the inventions according to the present application.

Confirmed Information/Added Information

Patent Application No: JP 2002-348622
Receipt Number: 50702302463
Title of Document Written Opinion
Handling Party: First Handling Senior Judge 0090
Initiation Date: November 13, 2007

< Confirmed Information/Added Information >

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[Filing Date] November 8, 2007
[To] Commissioner of the Patent Office
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[Application No.] JP2002-348622
[Amended by]
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[Contact] 0263-52-4653
[Transmittal No.] 454463

[Procedural Amendment 1]
[Name of Document Amended] Specification
[Name of Item Amended] Scope of Patent Claims
[Amendment Method] Change
[Details of Amendment]

[Patent Claims]

[Claim 1]

An electro-optical device wherein:

a plurality of first effective optical regions provided with a first electro-optical element,
a plurality of second effective optical regions provided with a second electro-optical element, and
a plurality of non-effective optical regions wherein no electro-optical element is provided
are disposed on a substrate, wherein:

each of the plurality of non-effective optical regions is arranged interposed between two of the
plurality of first effective optical regions and also arranged interposed between two of the second
effective optical regions; and

of the pluralities of first effective optical regions and second effective optical regions, in at least
one first effective optical region and second effective optical region, an electronic circuit is
formed for driving an aforementioned electro-optical element that is formed in the other first
effective optical region and second effective optical region.

[Claim 2]

An electro-optical device wherein:

a plurality of first effective optical regions provided with a first electro-optical element,
a plurality of second effective optical regions provided with a second electro-optical element, and
a plurality of non-effective optical regions wherein no electro-optical element is provided
are disposed on a substrate, wherein:

each of the plurality of non-effective optical regions is arranged interposed between two of the
plurality of first effective optical regions and also arranged interposed between two of the second
effective optical regions; and

in an aforementioned non-effective optical region, an electronic circuit is formed for driving an
aforementioned electro-optical element that is formed in at least one of the first effective optical
regions and the second effective optical regions.

[Claim 3]

An electro-optical device set forth in claim 1 or 2, wherein:

the first effective optical regions or the second effective optical regions are not disposed adjacent to each other.

[Claim 4]

An electro-optical device set forth in any one of claims 1 through 3, wherein:
a display region is formed from an aforementioned first effective optical, and aforementioned second effective, and an aforementioned non-effective optical region, where a layout pitch is equal in a row direction and a column direction of the display region between the plurality of first effective optical regions.

[Claim 5]

An electro-optical device set forth in any one of claims 1 through 3, wherein:
an aforementioned first effective optical region and an aforementioned second effective optical region have identical shapes.

[Claim 6]

An electro-optical device set forth in any one of claims 1 through 4, wherein:
a reflection preventing member is formed in an aforementioned non-effective optical region.

[Claim 7]

An electro-optical device set forth in any one of claims 1 through 6, wherein:
individual pixels are formed arranged corresponding to intersecting portions between a plurality of scan lines and a plurality of data lines; and
an aforementioned electronic circuit drives an aforementioned electro-optical element based on a scan signal from an aforementioned scan line and a data signal from an aforementioned data line.

[Claim 8]

An electro-optical device set forth in claim 7, wherein:
the electronic circuit has:
a first transistor that conducts to provide a data signal;
a capacitive element that holds, as an amount of electrical charge, the data signal that is supplied through the first transistor; and
a second transistor, for which the conductive state is controlled based on the amount of electrical charge that is held in the capacitive element, for providing, to an aforementioned electro-optical element, an amount of current corresponding to the conductive state thereof.

[Claim 9]

An electro-optical device set forth in any one of claims 1 through 8, wherein:
an aforementioned first electro-optical element and an aforementioned second electro-optical element are each two electro-optical elements that are selected from electro-optical elements for emitting green, blue, and red light.

[Claim 10]

An electro-optical device set forth in any one of claims 1 through 9, wherein:
an aforementioned first electro-optical element and an aforementioned second electro-optical element are each EL elements.

[Claim 11]

An electro-optical device set forth in claim 10, wherein:
in the EL element, a light-emitting layer is structured from an organic material.

[Claim 12]

An electro-optical device wherein:
a plurality of first light-emitting regions wherein a first light-emitting layer is formed,
a plurality of second light-emitting regions wherein a second light-emitting layer is formed, and
a plurality of non-light-emitting regions wherein no light-emitting layer is formed
are disposed on a substrate, wherein:
each of the plurality of non-light-emitting regions is arranged interposed between two of the plurality of first light-emitting regions and also arranged interposed between two of the second light-emitting regions; and

of the first light-emitting regions or second light-emitting regions, in at least one first light-emitting region or second light-emitting region, an electronic circuit is formed for controlling an aforementioned first light-emitting layer or second light-emitting layer that is formed in the other first light-emitting region or second light-emitting region.

[Claim 13]

An electro-optical device wherein:

a plurality of first light-emitting regions wherein a first light-emitting layer is formed,
a plurality of second light-emitting regions wherein a second light-emitting layer is formed, and
a plurality of non-light-emitting regions wherein no light-emitting layer is formed
are disposed on a substrate, wherein:

each of the plurality of non-light-emitting regions is arranged interposed between two of the plurality of first light-emitting regions and also arranged interposed between two of the second light-emitting regions; and

in an aforementioned non-effective light-emitting, an electronic circuit is formed for controlling an aforementioned first light-emitting layer or second light-emitting layer that is formed in at least one of the first light-emitting regions or the second light-emitting regions.

[Claim 14]

An electro-optical device set forth in claim 12 or 13, wherein:

the first light-emitting regions or the second light-emitting regions are not disposed adjacent to each other.

[Claim 15]

An electro-optical device set forth in any one of claims 12 through 14, wherein:

an aforementioned first light-emitting region and an aforementioned second light-emitting region have identical shapes.

[Claim 16]

An electro-optical device set forth in any one of claims 12 through 15, wherein:

a reflection preventing member is formed in an aforementioned non-light-emitting region.

[Claim 17]

An electro-optical device set forth in any one of claims 12 through 16, wherein:

individual pixels are formed arranged corresponding to intersecting portions between a plurality of scan lines and a plurality of data lines; and

an aforementioned electronic circuit of each of the pixels controls an aforementioned first light-emitting film or an aforementioned second light-emitting film based on a scan signal from an aforementioned scan line and a data signal from an aforementioned data line.

[Claim 18]

An electro-optical device set forth in any one of claims 12 through 17, wherein:

an aforementioned first light-emitting film and an aforementioned second light-emitting film are each two light-emitting films that are selected from light-emitting films for emitting green, blue, and red light.

[Claim 19]

An electro-optical device set forth in any one of claims 12 through 18, wherein:

an aforementioned first light-emitting film and an aforementioned second light-emitting film are each structured from an organic material.

[Claim 20]

An active matrix substrate wherein:

a plurality of first element forming regions wherein a first electro-optical element is formed,
a plurality of second element forming regions wherein a second electro-optical element is formed,
and

a plurality of non-element forming regions wherein no electro-optical element is formed
are disposed on a substrate, wherein:

each of the plurality of non-element forming regions is arranged interposed between two of the plurality of first element forming regions and also arranged interposed between two of the second element forming regions; and
of the pluralities of first element forming regions and second element forming regions, in at least one first element forming region or second element forming region, an electronic circuit is formed for driving an aforementioned electro-optical element that is formed in the other first element forming region or second element forming region.

[Claim 21]

An active matrix substrate wherein:

a plurality of first element forming regions wherein a first electro-optical element is formed,
a plurality of second element forming regions wherein a second electro-optical element is formed,
and

a plurality of non-element forming regions wherein no electro-optical element is formed

are disposed on a substrate, wherein:

each of the plurality of non-element forming regions is arranged interposed between two of the plurality of first element forming regions and also arranged interposed between two of the second element forming regions; and

in an aforementioned non-element forming region, an electronic circuit is formed for driving an aforementioned electro-optical element that is formed in at least one of the first element forming regions or the second element forming regions.

[Claim 22]

An active matrix substrate set forth in claim 20 or 21, wherein:

a reflection preventing member is formed in an aforementioned non-element forming region.

[Claim 23]

An electronic instrument, comprising:

an electro-optical device set forth in any one of claims 1 through 19.

[Claim 24]

An electronic instrument wherein is mounted an active matrix substrate set forth in any one of claims 20 through 22.

[Patent] 2002-348622 [Responsible Party] 0090 [Date] 1/E

Confirmed Information/Added Information

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Responsible party: First Handling Senior Judge 0090
Date: November 13, 2007

< Confirmed Information/Added Information >

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Decision to Grant

Patent Application Number: JP2002-348622
 Drafting Date: March 31, 2008
 Patent Examiner: GOTO, Ryoji 9610 2G00
 Title of the Invention: Electro-optical Device, Active Matrix Substrate, and Electronic Device
 Number of Claims: 24
 Patent Applicant: Seiko Epson Corporation
 Agent: KAMIYASAGI, Masataka (and 1 other)

Because no reason for refusal has been found for this application, a decision has been made grant the patent.

Dep Mng/Asst	Chf Exm/Asst	Examiner	Exm Asst	Clas. Ver. Clrk
	KOBAYASHI, Norifumi	GOTO, Ryoji		SATAKE, Masahiko
	8707	9610		2911

1. Application Type: Normal
2. Reference Document(s): Yes
3. Article 30 Applicable? No
4. Change In Name of Invention: No
5. Int. Cl.(IPC)

G09F 9/30 390C,
 G09F 9/30 338,
 G09F 9/30 365Z,
 G09G 3/20 624B,
 G09G 3/20 642K,
 G09G 3/30 Z,
 H05B 33/12 B,
 H05B 33/14 A

6. Microorganism:
7. Indicator that retroactive dating is disallowed:

Reference Information

Patent Application No: JP 2002-348622

1. Fields Searched (Int.Cl., Database Name)

G09F 9/00 - 9/46
 G09G 3/00 - 3/38
 H01L 27/32, 51/50
 H05B 33/00 - 33/28

2. Reference Patent Documents

Japanese Unexamined Patent Application Publication H11-185654 (JP, A)
 Japanese Unexamined Patent Application Publication 2002-278504 (JP, A)
 Japanese Unexamined Patent Application Publication 2001-356739 (JP, A)
 Japanese Unexamined Patent Application Publication 2001-109339 (JP, A)
 Japanese Unexamined Patent Application Publication H10-091094 (JP, A)

3. Reference Books or Magazines



TRANSLATOR CERTIFICATION

Date: February 7, 2023

To whom it may concern:

I, Dr. Warren Smith, a translator fluent in the Japanese and English languages, on behalf of Morningside Translations, do solemnly and sincerely declare that the following is, to the best of my knowledge and belief, a true and correct translation of the document(s) listed below in a form that best reflects the intention and meaning of the original text.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

The document is designated as:

- Notification of Reasons for Refusal for Patent Application Number: JP 2002-348622

Signature

Dr. Warren Smith

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