Trial decision

Invalidation No. 2015-800227

Tokyo, Japan	
Demandant	JNC CORPORATION
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The case of trial regarding the invalidation of Japanese Patent No. 5622057, entitled "Nematic Liquid Crystal Composition" between the parties above has resulted in the following trial decision:

Conclusion

The correction of the scope of claims of Japanese Patent No. 5622057 shall be approved as described in the corrected claims [1 to 5] in the corrected scope of claims attached to the written correction request.

The appeal of the case was groundless.

The costs in connection with the trial shall be borne by the demandant.

Reason

No. 1 History of the procedures

1. Patent in connection with the invalidation trial of the case

The patentee of Patent No. 5622057 in connection with the invalidation trial of the case (hereinafter referred to as the "Patent") is DAINIPPON INK & CHEMICALS, which is a demandee. The present application is a divisional application filed on September 27, 2012 as Patent Application No. 2012-214113, which was based on Patent Application No. 2005-316168 filed on October 31, 2005. The establishment of patent right of the inventions of five claims, entitled "Nematic Liquid Crystal Composition," was registered on October 3, 2014.

2. History of the procedures in the invalidation trial of the case

The invalidation trial of the case was requested by JNC CORPORATION, which is a demandant, and the history of the procedures (documents submitted by the parties) is as follows:

December 17, 2015	Written demand for trial (demandant)
March 15, 2016	Written reply for the trial case and written correction request
(demandee)	
May 6, 2016	Written refutation (demandant)
Dated June 29, 2016	Notification of matters to be examined in oral proceedings
September 14, 2016	Summary of arguments in oral proceedings (demandant)
September 14, 2016	Summary of arguments in oral proceedings (demandee)
September 28, 2016	Oral proceeding
October 19, 2016	Written statement (demandee)
November 2, 2016	Written statement (demandant)

No. 2 Overview of the parties' allegation and Means of proof

1 Parties' allegation

(1) Summary of request for trial by demandant

The demandant demanded the decision to the effect that the patent for the invention according to Claim 1-5 of Patent No. 5622057 shall be invalidated, and the costs in connection with the trial shall be borne by the demandee.

(2) Summary of reply by demandee

The demandee demanded the decision to the effect that the demand for trial of the case was groundless, and the costs in connection with the trial shall be borne by the demandant.

2 Proofs

Proofs submitted by the parties are as follows (hereinafter, Evidence A No. 1, for example, will be abbreviated as "A1" for each piece of evidence):

(1) Evidences submitted by the demandant

A1: International Publication No. WO2005/017067

A2: Japanese Unexamined Patent Application Publication No. 2004-238489

A3: Japanese Unexamined Patent Application Publication No. 2005-220355

A4: Japanese Unexamined Patent Application Publication No. 2001-181635

A5: Japanese Unexamined Patent Application Publication No. 2001-33748

A6: International application No. PCT/EP2006/004708 (see International Publication No. WO2006/133783)

A7: International application No. PCT/EP2005/006428 (see International Publication No. WO2005/123879)

A8: Japanese Patent Application No. 2006-144861 (see Japanese Unexamined Patent Application Publication No. 2006-328399)

A9: International Publication No. WO2006/038443

A10: Japanese Unexamined Patent Application Publication No. 2005-89759

A11: Japanese Unexamined Patent Application Publication No. 2007-119672 (the above-described pieces of evidence were submitted attached to the written demand for trial)

A12: Japanese Unexamined Patent Application Publication No. 2003-183655

A13: Japanese Unexamined Patent Application Publication No. 2003-201477

A14: Japanese Unexamined Patent Application Publication No. 2004-149775

A15: Japanese Unexamined Patent Application Publication No. 2004-352992

A16: Japanese Unexamined Patent Application Publication No. 2005-179676

A17: Japanese Unexamined Patent Application Publication No. H11-152297

A18: Japanese Unexamined Patent Application Publication No. 2004-2771

A19: Japanese Unexamined Patent Application Publication No. 2005-35985

A20: Japanese Unexamined Patent Application Publication No. 2004-2894

A21: Okamura, Masaya et al., "the 4th lecture in the course of lectures on liquid crystal science experiments: Technical Knowledge for Measurement of Liquid Crystal Properties (2)", JLCS journal "EKISHO", October 25, 2002, volume 6, no. 4, pp. 44 to 53

A22: Ishihara, Shoichi, "Factors Influencing Voltage Holding Ratio", Sharp Technical Journal, August 2005, no. 92, pp. 11 to 16

(the above-described pieces of evidence were submitted attached to the written refutation)

(2) Evidences submitted by the demandant

B1: Japanese Unexamined Patent Application Publication No. 2000-63305B2: edited by EKISHO BINRAN HENSYU IINKAI, "EKISHO BINRAN", Maruzen Co., Ltd., October 30, 2000, pp. 312 to 316

B3: "JEITA ED-2521B", Japan Electronics and Information Technology Industries Association, 2009, pp. 26 to 28, pp. 63 to 66 (the above-described pieces of evidence were submitted attached to the oral proceedings statement brief)

B4: "Explanatory material for oral proceeding for invalidation trial" (the above-described evidence was submitted attached to the written statement dated October 19, 2016)

No. 3 Regarding whether or not the corrections by the written correction request dated March 15, 2016 (hereinafter, referred to as the "correction of the case") are acceptable.

The correction of the case was demanded for each group of claims (Claims 1 to 5) in accordance with Article 126 (4) of the Patent Act which is applied mutatis mutandis pursuant to Article 134-2(3) and (9) of the Patent Act, and the body judges that the demand of the correction of the case should be admitted.

Reasons thereof are as follows:

1 Correction

A Correction 1

In Claim 1 of the scope of claims, the description "L1, L2, and L3 each independently denotes a single bond, -CH2CH2-, -(CH2)4-, -COO-, -OCH2-, -CH2O-, -

OCF2-, -CF2O-, or -C=C-" is corrected to read "L1, L2, and L3 each independently denotes a single bond, - CH2CH2-, -(CH2)4-, -OCH2-, -CH2O-, -OCF2-, -CF2O-, or - C=C- ".

B Correction 2

In Claim 1 of the scope of claims, the description "characterized" is corrected to read "characterized in that the holding ratio (%) is kept 96% or more at 60 degrees C after being heated one hour at 150 degrees C (the holding ratio (%) : [voltage measured]/[voltage applied] (%) with initial voltage of 5V, 200 ms frame time, and pulse width of 64 μ s in a 6 μ m-in-thickness TN-LCD cell)."

C Correction 3

In Claim 1 of the scope of claims, the description "a nematic liquid crystal composition" is corrected to read "a nematic liquid crystal composition (characterized by excluding a liquid crystalline medium comprising one or two or more kinds of ester compounds, and comprising a mixture of a polar compound having positive dielectric constant anisotropy as a base material, a liquid crystalline medium comprising one or more kinds of compounds having the following formula:

[Chemical formula 4]



(in the formula, R1 denotes one of an alkyl group and an alkoxy group that is halogenated, or is unsubstituted and has one to 15 carbon atoms, where, in addition thereto, one or more CH2 groups in these groups are optionally substituted by -C=C-, -C=C-, -O-, -CO-O-, or -O-CO- mutually independently such that oxygen atoms are not directly bonded to one another,

where a ring A denotes a ring structure facing to one of the left and the right in the following formula:

[Chemical formula 5]



または

or

and Z1 and Z2 denotes a single bond, -C=C-, -CF=CF-, -CH=CH-, -CF2O-, or -CH2CH2-, where at least one group from Z1 and Z2 denotes a group, -CF=CF-, and X denotes one of F, Cl, CN, SF5 and one of an alkyl group and an alkoxy group that is halogenated, or is unsubstituted and has one to 15 carbon atoms, where, in addition thereto, one or more CH2 groups in these groups are optionally substituted by -C=C-, -C=C-, -O-, -CO-O-, or -O-CO- each independently such that oxygen atoms are not directly bonded to one another, and where L1, L2, L3, L4, L5, and L6 each independently denotes one of H and F, and m denotes one of zero and one), and having positive dielectric constant anisotropy based on the mixture of the compound, and a polar compound mixture-based liquid crystalline medium comprising PPGU-V2-F). [Chemical formula 6]



PPGU-1V2-F

2 Judgment of suitability of the correction

(1) Whether or not the corrections are aimed at the matter prescribed in each of the provisos to Article 134-2(1) of the Patent Act

A Correction 1

Correction 1 is recognized to restrict the scope of claims by deleting -COOfrom the alternatives L1, L2, and L3 in a general formula (2) in the liquid crystal composition described in Claim 1.

Thus, the correction relating to Correction 1 is recognized to be aimed at the restriction of the scope of claims prescribed in Article 134-2(1), proviso No. 1 of the Patent Act.

B Correction 2

Correction 2 is recognized to restrict the scope of claims by limiting the liquid crystal composition described in Claim 1 to a liquid crystal composition having "the holding ratio (%) is kept 96% or more at 60 degrees C after being heated one hour at 150 degrees C."

Thus, the correction relating to Correction 2 is recognized to be aimed at the restriction of the scope of claims prescribed in Article 134-2(1), proviso No. 1 of the Patent Act.

C Correction 3

Correction 3 is recognized to restrict the scope of claims by excluding, from the liquid crystal composition described in Claim 1, a liquid crystal composition containing ester compounds, a liquid crystal composition containing a compound group that is an essential component in Claim 1 of the scope of claims in A6, and a liquid crystal composition containing a compound used in a part of Examples in A7.

Thus, the correction relating to Correction 3 is recognized to be aimed at the restriction of the scope of claims prescribed in Article 134-2(1), proviso No. 1 of the Patent Act.

(2) Whether or not the corrections comply with the provision of Article 126 (5) of the Patent Act which is applied mutatis mutandis pursuant to Article 134-2(9) of the Patent Act

A Correction 1

It is obvious that "single bonds, -CH2CH2-, -(CH2)4-, -COO-, -OCH2-, -CH2O-, -OCF2-, -CF2O-, or -C=C-" were accepted as the alternatives L1, L2, and L3 in the liquid crystal composition described in Claim 1 (see paragraph [0012] and the like in the specification of the Patent), and Correction 1 accordingly complies with the provision of Article 126 (5) of the Patent Act which is applied mutatis mutandis pursuant to Article 134-2(9) of the Patent Act.

B Correction 2

Regarding the addition of a technical matter, "the holding ratio (%) is kept 96% or more at 60 degrees C after being heated one hour at 150 degrees C" in Correction 2, according to paragraphs [0034], [0037], and [Table 1] in the specification of the Patent, it is recognized that there is a description, " the holding ratio (%) is kept 96% or more at 60 degrees C after being heated one hour at 150 degrees C" in the specification of the Patent. In addition, as described as "... it is considered important for active matrix type display systems to have a high voltage holding rate" in paragraph [0002] in the specification of the Patent, it is common general technical knowledge that a high voltage holding rate is required of active matrix type display systems in the first place, so that considering this, it is natural to understand that high voltage holding rates more than 96%, which is a value in the Examples (that is, preferable physical properties), are good values unless the circumstances are exceptional. In addition, because it is not understood that a new matter is introduced from Correction 2, not only is 96% recognized as "the holding ratio (%) at 60 degrees C after being heated one hour at 150 degrees C" in the invention of the Patent, but also "96% or more" is recognized to be a matter equal to the described matter.

Thus, Correction 2 complies with the provision of Article 126 (5) of the Patent Act which is applied mutatis mutandis pursuant to Article 134-2(9) of the Patent Act.

C Correction 3

Correction 3 is intended for so-called "disclaimer" that excludes a case of a liquid crystal composition containing a liquid crystal compound having a specific chemical constitution. This correction is merely excluding a part of embodiments of the invention that are specified by the matters described in the description in Claim 1 before correction, and does not introduce a new technical matter such as appearance of the effect that is not based on the descriptions in the specification of the Patent.

Thus, Correction 3 complies with the provision of Article 126 (5) of the Patent Act which is applied mutatis mutandis pursuant to Article 134-2(9) of the Patent Act.

(3) Whether or not the corrections comply with the provision of Article 126 (6) of the Patent Act which is applied mutatis mutandis pursuant to Article 134-2(9) of the Patent Act

A Correction 1

Since Correction 1 restricts the scope of claims by deleting -COO- from the

alternatives L1, L2, and L3 in a general formula (2) in the liquid crystal composition described in Claim 1, Correction 1 does not practically expand or change the scope of claims.

Thus, Correction 1 accordingly complies with the provision of Article 126 (6) of the Patent Act which is applied mutatis mutandis pursuant to Article 134-2(9) of the Patent Act.

B Correction 2

Since Correction 2 restricts the scope of claims by limiting the liquid crystal composition described in Claim 1 to a liquid crystal composition having "the holding ratio (%) is kept 96% or more at 60 degrees C after being heated one hour at 150 degrees C" Correction 2 does not practically expand or change the scope of claims.

Thus, Correction 2 accordingly complies with the provision of Article 126 (6) of the Patent Act which is applied mutatis mutandis pursuant to Article 134-2(9) of the Patent Act.

C Correction 3

Since Correction 3 restricts the scope of claims by so-called "disclaimer" that excludes a case of a liquid crystal composition containing a liquid crystal compound having a specific chemical constitution, Correction 3 does not practically expand or change the scope of claims.

Thus, Correction 3 complies with the provision of Article 126 (6) of the Patent Act which is applied mutatis mutandis pursuant to Article 134-2(9) of the Patent Act.

3 Summary of the corrections

As described above, the correction of the case is aimed at the matter prescribed in the provisos to Article 134-2(1) of the Patent Act, and complies with the provisions of Articles 126(4) and (6) of the Patent Act which are applied mutatis mutandis pursuant to Article 134-2(9) of the Patent Act.

Therefore, the Correction of the case shall be approved.

No. 4 Description of the scope of claims of the case

As described above in "No. 3," the request for the correction of the case is legitimate, so that the descriptions of Claims 1 to 5 that are the subject of the request for the correction of the case are as follows:

"[Claim 1]

A nematic liquid crystal composition, the composition comprising:

30% to 65% of a compound represented by a structural formula (1) as a first component,

[Chemical formula 1]

$$/ - C_3H_7$$
 (1); and

two or more kinds of compounds as a second component that are selected from a group consisting of compounds represented by a general formula (2),

[Chemical formula 2]

$$R^{1}-B^{1}-L^{1}-B^{2}-L^{2}-B^{3}-L^{3}- (2)$$

(in the formula, R1 denotes one of an alkyl group having one to 15 carbon atoms and an alkenyl group having two to 15 carbon atoms, the groups being unsubstituted or having at least one halogen group as a substituent group, one or two or more CH2 groups in these groups are optionally substituted by -O-, -CO-O-, -S-, or -CO- independently such that oxygen atoms are not directly bonded to one another, and

B1, B2, and B3 each independently comprises groups selected from a group consisting of:

(a) a trans-1,4-cyclohexylene group; and

(b) a 1, 4-phenylene group (one CH2 group, or two or more CH2 groups nonadjacent to each other, which are present in this group, are optionally substituted by -N-), the group (a) and the group (b) being optionally substituted by CH3 or halogen, and

L1, L2, and L3 each independently denote a single bond, "- CH2CH2-, -(CH2)4-, -OCH2-, -CH2O-, -OCF2-, -CF2O-, or -C=C-,

Q1 denotes -OCH2-, -OCF2-, -OCHF-, -CF2-, or a single bond,

X1 to X3 each independently denotes H, F, or Cl),

the composition being characterized in that a nematic-isotropic transition temperature is 68 degrees C to 120 degrees C, the holding ratio (%) is kept 96% or more at 60 degrees C after being heated one hour at 150 degrees C (the holding ratio (%) : [voltage measured]/[voltage applied] (%) with initial voltage of 5V, 200 ms frame time, and pulse width of 64 μ s in a 6 μ m-in-thickness TN-LCD cell),

(characterized by excluding a liquid crystalline medium comprising one or two or more kinds of ester compounds, and comprising a mixture of a polar compound having positive dielectric constant anisotropy as a base material,

a liquid crystalline medium comprising one or more kinds of compounds having the following formula:

[Chemical formula 4]



(in the formula, R1 denotes one of an alkyl group and an alkoxy group that is halogenated, or is unsubstituted and has one to 15 carbon atoms, where, in addition thereto, one or more CH2 groups in these groups are optionally substituted by $-C=C_{-}$. C=C-, -O-, -CO-O-, or -O-CO- mutually independently such that oxygen atoms are not directly bonded to one another,

where a ring A denotes a ring structure facing to one of the left and the right in the following formula:

[Chemical formula 5]



または

and Z1 and Z2 denotes a single bond, -C=C-, -CF=CF-, -CH=CH-, -CF2O-, or -CH2CH2-, where at least one group from Z1 and Z2 denotes a group, -CF=CF-, and

X denotes one of F, Cl, CN, SF5 and one of an alkyl group and an alkoxy group that is halogenated, or is unsubstituted and has one to 15 carbon atoms, where, in addition thereto, one or more CH2 groups in these groups are optionally substituted by -C=C-, -C=C-, -O-, -CO-O-, or -O-CO- each independently such that oxygen atoms are not directly bonded to one another, and

where L1, L2, L3, L4, L5, and L6 each independently denotes one of H and F,

and m denotes one of zero and one), and having positive dielectric constant anisotropy based on the mixture of the compound, and a polar compound mixture-based liquid crystalline medium comprising PPGU-V2-F).

[Chemical formula 6]



PPGU-1V2-F

[Claim 2]

The nematic liquid crystal composition according to Claim 1, further comprising one or two or more kinds of compounds that are selected from a group consisting of compounds represented by a general formula (3) as a third component,

[Chemical formula 3]



(in the formula, R2 denotes the same meaning as R^1 ,

 B^4 denotes the same meaning as B^1 ,

 L^4 denotes the same meaning as L^1 ,

when there are a plurality of B^4 and L^4 , they may be the same or may be different from one another,

m denotes zero, one, or two,

n denotes zero or one,

Q² denotes -OCH₂-, -OCF₂-, -OCHF-, -CF₂-, or a single bond, and

 X^4 to X^8 each independently denotes H, F, or Cl).

[Claim 3]

The nematic liquid crystal composition according to Claim 1 or 2, the composition having a nematic-isotropic transition temperature of 68 degrees C to 120 degrees C, a crystal or smectic-nematic transition temperature of -80 degrees C to -20 degrees C, refractive index anisotropy Δn of 0.05 to 0.15, and dielectric constant anisotropy $\Delta \epsilon$ of 2.5 to 10.0.

[Claim 4]

A liquid crystal display element using the nematic liquid crystal composition according to any one of Claims 1 to 3.

[Claim 5]

An active matrix liquid crystal display element using the nematic liquid crystal composition according to any one of claims 1 to 3."

(Hereinafter, the inventions according to the above Claims 1 to 5 after the correction of the case are referred to as the Invention 1 to the Invention 5 according to the claim numbers, and they are referred to as the "Invention of the case" as the whole.)

No. 5 Reasons for invalidation alleged by the demandant

The reasons for invalidation alleged by the demandant are as follows:

Reasons for invalidation A, 1-1, 1-2, 1-3, 2-1, 2-2, 2-3, and 3

However, note that according to item "3" of the "chief administrative judge" in the 1st oral proceeding record, it is recognized that reasons for invalidation 1-2, 2-1, 2-2, and 2-3 are not the subjects of the proceeding as far as the scope of claims after the correction of the case is the subject. Thus, while only reasons for invalidation A, 1-1, 1-3, and 3 are to be judged in the following, reasons for invalidation A, 1-1, 1-3, and 3 are recognized as follows.

Reason for invalidation A: The inventions according to the claims of the Inventions 1 to 5 are the inventions described in A11, and accordingly fall under Article 29(1)(iii) of the Patent Act. In addition, the inventions according to the claims of the Inventions 1 to 5 could be provided easily by a person skilled in the art based on the inventions described in A11, and thus the demandee should not be granted a patent for the Invention in accordance with the provisions of Article 29(2) of the Patent Act. The patent for inventions according to Claims 1 to 5 after the correction of the case was registered while violating the provisions of the same article of the same act, and accordingly falls under Article 123(1)(ii) and should be invalidated.

Reason for invalidation 1-1: The Inventions 1 to 5 could be provided easily by a person skilled in the art based on the inventions described in A1, and thus the demandee should not be granted a patent for the Invention in accordance with the provisions of Article 29(2) of the Patent Act. The patent for inventions according to Claims 1 to 5 after the correction of the case was registered while violating the provisions of the same article of the same act, and accordingly falls under Article 123(1)(ii) and should be invalidated.

Reason for invalidation 1-3: The Inventions 1 to 5 could be provided easily by a

person skilled in the art based on the inventions described in A3, and thus the demandee should not be granted a patent for the Invention in accordance with the provisions of Article 29(2) of the Patent Act. The patent for inventions according to Claims 1 to 5 after the correction of the case was registered while violating the provisions of the same article of the same act, and accordingly falls under Article 123(1)(ii) and should be invalidated.

Reason for invalidation 3: The descriptions in the scope of claims after the correction of the case do not meet the requirement stipulated in Article 36(6)(i) and (ii) of the Patent Act. In addition, the descriptions of the detailed description of the invention of the case do not meet the requirement stipulated in Article 36(4)(i) of the Patent Act. Thus, the demandee should not be granted a patent, and the patent for inventions according to Claims 1 to 5 after the correction of the case was registered while violating Article 36(4)(i) or (6) of the same act, and accordingly falls under Article 123(1)(iv) and should be invalidated.

No. 6 Judgment by the body

The body judges that each of the reasons for invalidation A, 1-1, 1-3, and 3 alleged by the demandant has no reason.

Hereinafter, detailed descriptions of the reasons will be provided.

1. Reason for invalidation A

(1) Regarding fulfilment of the requirements of the patent application of the case as a divisional application

According to articles "A)-1" and "A)-2" at Pages 82 to 83 in the written demand for trial, a request for trial based on the reason for invalidation A was made for reasons; "the patent application of the case is a divisional application filed on September 27, 2012 on the basis of Patent Application No. 2005-316168 as an original application; however, since the patent application of the case is a divisional application of the inventions that are not disclosed in the original application, the divisional application is not legal and thus, the Patent does not meet the requirement stipulated in Article 44(i) of the Patent Act, and the filing date is acknowledged as September 27, 2012, which is an actual filing date."

In view of the above, the Invention is the invention described in A11, which is a publication of the unexamined original application, or the invention that could be provided easily by a person skilled in the art based on the inventions described in A11." Thus, propriety of the requirements for division of the patent application of the case will

now be discussed first of all.

(1-1) Description at paragraph [0014] of the original application

According to Pages 2 to 3 of the written reply, the demandee alleges that "as seen in the description 'in the liquid crystal composition according to the Invention, the content of a compound represented by a structural formula (1) as a first component is 30% to 65%...'" In the specification at the initial application of the original application (Japanese Patent Application No. 2005-316168) (at paragraph [0014] in A11), the technical matter "comprising: 30% to 65% of a compound represented by a structural formula (1) (the formula is omitted here) as a first component" of the Invention 1 is "described in the specification" of the original application.

Thus, let's see the descriptions in the specification at the initial application of the original application (Japanese Patent Application No. 2005-316168). "[Claim 1]

comprising:

35% to 65% of a compound represented by a structural formula (1) as a first component,

[Chemical formula 1]

C₃H₇ (1)

"[0010]

As a result of keen examinations to solve the problem, the invention

comprising:

35% to 65% of a compound represented by a structural formula (1) as a first component,

[0011]

[Chemical formula 1]

"[0014]

In the liquid crystal composition according to the Invention, the content of a compound represented by a structural formula (1) as a first component is 30% to 65%, and the content is preferably within the range of 40 to 60% by mass."

"[0036]

(1 to 3) Synthesis of liquid crystal compositions

The nematic liquid crystal compositions (No. 1), (No. 2), and (No. 3) below were

synthesized, and the physical property values thereof were measured. The results are shown in Table 1.

[0037] [Table 1]

		1 (No. 1)	2 (No. 2)	3 (No. 3)
	 第一成分 0d1-Cy-Cy-3 第一成分数値化合物 0d1-Cy-Cy-5 第二成分 2-Cy-Cy-2t-2ta-2ta-1-F 2-Cy-Cy-2ta-2ta-1-F 2-Cy-Cy-2ta-2ta-1-F 	40% 143 2%	50%	59% 0%
鹿戌	4-Cy-Cy-Ph-Ph-Ph-F 第三成分 3-8p1-Ph3-F その他 0d1-Cy-Cy-Ph1-F 3-Ph-T-Ph-1 0d3-Ph-T-Ph-1	0% 13% 5%	05 05 135 45	05 138 25 83
T. (C)		70.8	70.0	70.0
T-4 (1	C)	-25	-31	-20
Δ τ		3.0	3.0	3.0
Δπ		0.106	0,115	0.095
n		9.5	9.4	2.6
¥1		33	33	35
R (5)	96	.96	96
HR C	%)加熱150°C1時間長	96	96	96

組成 Composition

第一成分	First component
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第一成分類似化合物 Compound similar to first component

- 第二成分 Second component
- 第三成分 Third component

その他 Others

HR(%)加熱150℃1時間後

HR (%) after being heated one hour at 150

degrees C

[0038]

The properties of the nematic liquid crystal compositions according to 1 to 3 (No. 1) to (No. 3) showed desired values in all of the properties including a nematic phaseisotropic liquid phase transition temperature (T_{N-I}) , a solid phase or smectic phasenematic phase transition temperature $(T_{\rightarrow N})$, dielectric constant anisotropy ($\Delta\epsilon$), and refractive index anisotropy (Δn). In addition, the nematic liquid crystal compositions have low viscosities, good response speeds of a panel, and further keep the initial values of holding rates after being heated one hour at 150 degrees C, and thus they have good reliability.

[0039]

(Comparative Examples 1 to 3) Synthesis of liquid crystal compositions

The nematic liquid crystal compositions (R1) to (R3) shown below were synthesized as comparative examples, and the physical property values thereof were measured. The results are shown in Table 2.

[0040]

[Table 2]

		北統領1 (R1)	比較例2 (82)	比較何3 (83)
	第一成分 0d1-Cy-Cy-3 第一成分類衍化合物	30%	30%	50%
	0d1-Cy-Cy-5	235	195	95
	0d3-Cy-Cy-3 第二成分	5%	5%	55
	2-Cy-Cy-Ph-Ph1-F	3%	35	58
網纹	3-Cy-Cy-Ph-Ph1-F	6%.	6%	05
	4-Cy-Cy-Ph-Ph1-F 第三成分	6%	en.	es.
	3-Np1-Ph3-F その他	135	13%	15%
	0d1-Cy-Cy-Ph1-F 3-Ph-T-Fh-1	55	35	35 20 65
	0d5-Ph-1-Ph-3d0	9%	135	17%
Tes C	C)	74.3	73, 2	71.3
T-4 (C)	~46	~40	-31
Δ +		3.0	3.0	3.1
Δn		0.100	0.108	0.130
17		10.6	10.0	10.4
y1		37	38	39
HR (%)	96	96	96
HR (%)加熱160°C1時間後	96	.96	96

組成 Composition

第一成分 Fir	st component
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第一成分類似化合物 Compound similar to first component

第二成分 Second component

第三成分 Third component

その他 Others

HR(%)加熱150C1時間後 HR(%) after being heated one hour at 150

degrees C

- 比較例1 (R1) Comparative Example 1 (R1)
- 比較例2 (R2) Comparative Example 2 (R2)
- 比較例3 (R3) Comparative Example 3 (R3)

[0041]

The contents of the first components were 30% in Comparative Examples 1 to 3, and they had higher viscosities."

Hence, at least the specification at the initial application of the original application

discloses liquid crystal compositions containing 30% of a compound represented by a structural formula (1) as Comparative Examples 1 to 3 in paragraph [0014]. Meanwhile, except the description in paragraph [0014], the lower limit of a compound represented by the structural formula (1) according to the invention relating to the scope of claims is 35%, and a liquid crystal composition containing 30% of the compound is treated as a comparative example. If so, considering that there is certainly a description at paragraph [0014] "In the liquid crystal composition according to the Invention, the content of a compound represented by a structural formula (1) as a first component is 30% to 65%," it can be considered that "30%" in "the content of a compound represented by a structural formula (1) as a first component is 30% to 65%," is considered to be error of "35%"" (see Page 7 in the Oral proceedings statement brief by the demandant). Thus, propriety of the divisional application, in which the descriptions of Comparative Examples 1 to 3 in the original application are regarded as the Patent, will be examined below.

(1-2) Relation between the essence of the invention relating to the original application and Comparative Examples 1 to 3

The case of seeking rescission of a decision to revoke a patent of 2004 (Gyo-Ke) 5 disclosed at Page 83 of the written demand for trial shows in general terms that "the invention that can be newly filed as a divisional application extracted from the original application under Article 44(1) of the Patent Act is not limited only to the invention described in the scope of claims in the specification attached to the application of the patent of the original application, and it is reasonable to say that the invention is described in the detailed description of the invention or the drawing in the attached specification if all the technical matters to the effect are described such that a person skilled in the art can accurately understand, and can easily implement the invention (see Judgment of the Supreme Court of Japan, 2nd Petty Bench, March 13, 1981, 132 Saiban Shu Minji 225)," in which a specific case is examined to explain that "a negative evaluation that 'the compounds according to Comparative Examples 7 and 8 are not used in a refrigerating cycle' is definitely given to the compounds according to Comparative Examples 7 and 8" in the original specification (see Page 15, Line 3), so that it has to be said that positioning comparative examples as examples reversely is beyond the understanding of a person of ordinary skill in the relevant art who came into contact with the original specification. Thus, it is obvious that the descriptions of Comparative Examples 7 and 8 described in the original specification do not support that the refrigeration device using the compound of the case "is described in the original

specification to the effect such that a person skilled in the art can accurately understand, and can easily implement the invention," and thus "the Invention that contains the compounds according to Comparative Examples 7 and 8 as a lubricant oil of a working fluid composition used in an ammonia refrigeration device is not consistent with the essence of each of the inventions relating to the original application, and accordingly is said to be not described in the original specification. If so, it can be said that it is required that Comparative Examples 1 to 3 were described not only merely in the original application but also described so as to be consistent with the essence of the invention relating to the original application in order to meet the requirements for division.

Hence, it will be examined below whether Comparative Examples 1 to 3 described in the original application were described so as to be consistent with the essence of the invention relating to the original application.

The following is described in the original application (A11).

(11a)

"[0003]

In a twisted nematic liquid crystal display device (TN-LCD) and a supertwisted nematic liquid crystal display device (STN-LCD), a demand for a liquid crystal composition having a reduced viscosity is increasing in order to enhance the response speed of a display. In addition, a liquid crystal composition having a wide nematic phase temperature range is required in order to achieve a wide operational temperature range from a low-temperature region to a high-temperature region. [0004]

A low-viscosity liquid crystal composition can be obtained by increasing the content rate of a bicyclohexane derivative or the like consisting of a cyclohexane ring having a small Δn value. However, these compounds have strong smectic properties, so that when the content rate of a bicyclohexane derivative is increased, it is difficult to reduce the lower limit temperature of a nematic phase (T-n), and accordingly it is difficult to obtain a liquid crystal composition having a wide nematic phase temperature range.

[0005]

Lower-viscosity liquid crystal compositions are already known, and specific examples of preferable compounds thereof are disclosed (see Patent Document 3). In addition, a liquid crystal composition having small refractive index anisotropy that is a combination of a bicyclohexane derivative and a phenyl-bicyclohexyl compound is already known, and the specific example of preferable compounds thereof are disclosed (see Patent Document 4). However, these compositions have a viscosity that is not sufficiently low.

[0006]

Meanwhile, liquid crystal compositions of which liquid crystal temperature ranges are adjusted using a tetracyclic compound are already known, and specific examples of preferable compounds thereof are disclosed (see Patent Document 5). However, these compositions have a viscosity that is not sufficiently low to respond to a response speed. [0007]

As described above, it is difficult to obtain low-viscosity liquid crystal compositions having a wide liquid crystal phase temperature range."

(11b)

"[Problem to be solved by the invention] [0009]

An object of the present invention is to provide a liquid crystal composition for an active matrix liquid crystal display element, the composition having a wide liquid crystal phase temperature range and a low viscosity, and to provide an active matrix liquid crystal display element using the liquid crystal composition and having a wide operational temperature range."

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(11c) (partially described again)"[Means for solving the problem][0010]
```

As a result of keen examinations to solve the problem, there is provided a liquid crystal composition for an active matrix liquid crystal display element, and a liquid crystal display element comprising the liquid crystal composition, the liquid crystal composition comprising:

35% to 65% of a compound represented by a structural formula (1) as a first component,

```
[0011]
```

[Chemical formula 1]

(1) " and C_3H_7

two or more kinds of compounds as a second component that are selected from a group consisting of compounds represented by a general formula (2),

[0012] [Chemical formula 2]

$$R^{1}-B^{1}-L^{1}-B^{2}-L^{2}-B^{3}-L^{3}-\bigvee_{X^{3}}^{X^{1}}Q^{1}-X^{2}$$
 (2)

(in the formula, R^1 denotes one of an alkyl group having one to 15 carbon atoms and an alkenyl group having two to 15 carbon atoms, the groups being unsubstituted or having at least one halogen group as a substituent group, one or two or more CH₂ groups in these groups are optionally substituted by -O-, -S-, or -CO- independently such that oxygen atoms are not directly bonded to one another, and

 B^1 , B^2 , and B^3 each independently comprises groups selected from a group consisting of:

(a) a trans-1,4-cyclohexylene group (one CH_2 group, or two or more CH_2 groups nonadjacent to each other, which are present in this group, are optionally substituted by -O- and/or -S-); and

(b) a 1, 4-phenylene group (one CH_2 group, or two or more CH_2 groups nonadjacent to each other, which are present in this group, are optionally substituted by -N-), the group (a) and the group (b) being optionally substituted by CH_3 or a halogen, and

 L^1 , L^2 , and L^3 each independently denotes a single bond, -CH₂CH₂-, -(CH₂)₄-, -COO-, -OCH₂-, -CH₂O-, -OCF₂-, -CF₂O-, or -C=C-,

 Q^1 denotes -OCH₂-, -OCF₂-, -OCHF-, -CF₂-, or a single bond, and

X 1 to X 3 each independently denotes H, F, or Cl)."

(11d)

"[0030]

In the present invention, it is preferable that a nematic phase-isotropic liquid phase transition temperature (T_{N-I}) should be 70 degrees C or more. It is preferable that a solid phase or smectic phase-nematic phase transition temperature $(T_{\rightarrow N})$ should be -20 degrees C or less. It is preferable that dielectric constant anisotropy ($\Delta\epsilon$) at 25 degrees C should be 2.5 to 7.0, and more preferably 3.0 to 5.0. It is preferable that refractive index anisotropy (Δn) at 25 degrees C should be 0.08 to 0.13."

(11e) (described again)"[0036](1 to 3) Synthesis of liquid crystal compositions

The nematic liquid crystal compositions (No. 1), (No. 2), and (No. 3) below were synthesized, and the physical property values thereof were measured. The results are shown in Table 1.

[0037]

[Table 1]

		1 (No. 1)	2 (No. 2)	3 (No. 3)
	第一成分 0d1-Cy-Cy-3 第一成分類似化合物 0d1-Cy-Cy-5 第二成分 第二成分 5-Cy-Cy-3p-Dp1-F	405 145	sos	595
	3-Cy-Cy-Ph-Ph1-F	65	65	65
截式	4-Cy-Cy-Ph-Ph1-F 第三成分	636	6%	65
	3-Np1-Ph3-F その他	135	135	13%
	0d1-Cy-Cy-Ph1-F 3-Ph-T-Ph-1	5%	45	25 85
	0d3-Ph-T-Ph-3d0	13%	17%	
7+1 (C)	70.8	70.0	70.0
T-4 (1	C)	-25	-31	-20
Δ τ		3.0	3.0	3, 0
An		0.106	0.115	0.098
n		9.5	9.4	9.6
¥1		33	33	35
HR (53	96	96	96
HR (%) 加熱150°C1時間後		96	96	96

組成 Composition

第一成分	First component
/// //////	

第一成分類似	以化合物	Compound sin	nilar to first component
第二成分	Second compo	onent	
第三成分	Third compon	ent	
その他	Others		
HR (%) 力	□熱150℃1	時間後	HR (%) after being heated one hour at 150
degrees C			

[0038]

The properties of the nematic liquid crystal compositions according to 1 to 3 (No. 1) to (No. 3) showed desired values in all of the properties, including a nematic phaseisotropic liquid phase transition temperature (T_{N-I}), a solid phase or smectic phasenematic phase transition temperature ($T_{\rightarrow N}$), dielectric constant anisotropy ($\Delta\epsilon$), and refractive index anisotropy (Δn). In addition, the nematic liquid crystal compositions have low viscosities, good response speeds of a panel, and further keep the initial values of holding rates after being heated one hour at 150 degrees C, and thus they have good reliability.

[0039]

(Comparative Examples 1 to 3) Synthesis of liquid crystal compositions

The nematic liquid crystal compositions (R1) to (R3) shown below were synthesized as comparative examples, and the physical property values thereof were measured. The results are shown in Table 2.

[0040]

[Table 2]

		北統領1 (81)	12.42.642 (R2)	比較前3 (83)
	第一成分 0d1-Cy-Cy-3 第一成公共初か会社	30%	30%	20%
	0d1-Cy-Cy-5	235	195	95
	0431-Cy-Cy-3 第二成分	5%	5%	55
	2-Cy-Cy-Ph-Ph1-F	35	35	58
網纹	3-Cy-Cy-Ph-Ph1-F	675	6%	6%
	4-Cy-Cy-Fh-Fh1-F 第三成分	68	en.	65
	3-Npt-Ph3-F その袖	13%	13%	15%
	0d1-Cy-Cy-PhI-F 3-Ph-T-Fh-1	55	35	35 30
	0d3-Ph-1-Ph-3d0	9%	135	17%
Tes C	C)	74.3	73, 2	71.3
T-4 (C)	~46	~40	-31
Δ +		3.0	3.0	3.1
Δn		0.100	0.108	0.130
17		10.6	10.0	10.4
y1		37	38	39
HR C	%)	96	96	96
HR (%)加熱160℃1時間後	96	.945	96

組成 Composition

第一成分 First component

第一成分類似化合物 Compound similar to first component

第二成分 Second component

第三成分 Third component

その他 Others

HR(%)加熱150°C1時間後 HR(%) after being heated one hour at 150

degrees C

- 比較例1 (R1) Comparative Example 1 (R1)
- 比較例2 (R2) Comparative Example 2 (R2)
- 比較例3 (R3) Comparative Example 3 (R3)

[0041]

The contents of the first components were 30% in Comparative Examples 1 to 3, and they had higher viscosities."

(11f)

"(Comparative Example 4) Synthesis of liquid crystal composition

The nematic liquid crystal composition (R4) shown below was synthesized as a comparative example, and the physical property values thereof were measured. The results are shown in Table 3.

[0043]

[Table 3]

		比較例4 (R4)
	第一成分	
	第二成分	
	第三成分	
組成	その他	
	5-Cy-Ph-F	10%
	6-Cy-Ph-F	15%
	7-Cy-Ph-F	15%
	3-Cy-Cy-Ph-OCFFF	20%
	3-Cy-Cy-2-Ph-OCFFF	20%
	5-Cy-Cy-2-Ph-0CFFF	20%
T _{N-1} (*	C)	65
Δ ε		5.6
Δn		0.074
72		11

組成 Composition

第一成分	First co	omponent
第二成分	Second	component
第三成分	Third c	component
その他	Others	
比較例4	(R4)	Comparative Example 4 (R4)

[0044]

The nematic liquid crystal composition according to Comparative Example 4 (R4) had a higher viscosity, and accordingly <u>had a response speed of a panel that was</u> <u>not sufficiently high</u>. In addition, the nematic liquid crystal composition according to Comparative Example 4 (R4) had a nematic phase-isotropic liquid phase transition temperature (T_{N-I}) of 65 degrees C, which was low, and had the liquid crystal phase in a narrow temperature range, and thus cannot be used as a practical liquid crystal composition.

[0045]

(Comparative Examples 5 to 8) Synthesis of liquid crystal compositions

The nematic liquid crystal compositions (R5) to (R8) shown below were synthesized as comparative examples, and the physical property values thereof were measured. The results are shown in Table 4.

[0046]

[Table 4]

		比較得多(R5)	比較所6 (85)	比較何7 (R7)	比較968 (85)
副纹	幣一成分 第一成分類版化合物 0d1-Cy-Cy-5 0d3-Cy-Cy-3 第二成分	128	115	115	es es
	第三成59 その他 7-Cy-Hr-F 3-Cy-Cy-Hr-0CFF 3-Cy-Cy-Hr-0CFF 4-Cy-Cy-Hr-0CFF 5-Cy-Cy-Hr-0CFF 3-Cy-Cy-Hr-0CFF 3-Cy-Cy-Hr-7 3-Cy-Cy-Hr-7 3-Cy-Cy-Hr-7 3-Cy-Ph1-Ph3-F 3-Cy-Ph1-Ph3-F 5-Cy-Cy-Hr-7 3-Cy-Ph1-Ph3-F 5-Cy-Cy-Hr-7 3-Cy-Fr-1-F 141-Cy-Cy-Fh1-F 141-Cy-Cy-Fh1-F	95 73 55 85 105 115 65 45 85 75 135	98 98 88 58 105 115 68 123 115	75 85 95 105 85 95 105 125	95 85 75 95 105 115 75 115 75 105 65
T _{F-1} ('C)		85	83	77	98
T_4 (C)		-40			
41		7.8	6.1		Sector Contraction
Δn		0.686	0,076	0,988	0.086
71		108	101	107	98

組成 Composition

第一成分 First component

- 第一成分類似化合物 Compound similar to first component
- 第二成分 Second component
- 第三成分 Third component
- その他 Others
- 比較例5 (R5) Comparative Example 5 (R5)
- 比較例6 (R6) Comparative Example 6 (R6)
- 比較例7 (R7) Comparative Example 7 (R7)
- 比較例8 (R8) Comparative Example 8 (R8)

[0047]

The nematic liquid crystal compositions according to Comparative Examples 5

to 8 (R5 to R8) had high nematic phase-isotropic liquid phase transition temperatures (T_{N-I}) , but had higher viscosities, and accordingly <u>had response speeds of a panel that</u> were not sufficiently high.

[0048]

(Comparative Example 9) Synthesis of liquid crystal composition

The nematic liquid crystal composition (R9) shown below was synthesized as a comparative example, and the physical property values thereof were measured. The results are shown in Table 5.

[0049]

[Table 5]

		比較例9(R9)
	第一成分	
	第二成分	
	第三成分	
	その他	
	5-Cy-Ph-F	6%
	7-Cy-Ph-F	7%
dia tric	3-Cy-Ph-02	4%
REVOC	2-Cy-Cy-Ph1-F	6%
	5-Cy-Cy-Ph1-F	7%
	3-Cy-Cy-E-Ph1-F	10%
	2-Cy-Cy-Ph3-F	8%
	3-Cy-Cy-Ph3-F	10%
	5-Cy-Cy-Ph3-F	9%
	3-Cy-Cy-Ph3-CFFF	125
	5-Cy-Cy-Ph3-CFFF	11%
	3-Cy-Cy-2-Cy-Ph1-F	5%
	5-Cy-Cy-2-Cy-Ph1-F	5%
T ₈₋₁ (°C)		87
Δn		0.082
12		17

組成 Composition

- 第一成分 First component
- 第二成分 Second component
- 第三成分 Third component
- その他 Others

比較例9(R9) Comparative Example 9(R9)

[0050]

The nematic liquid crystal composition according to Comparative Example 9

(R9) had a high nematic phase-isotropic liquid phase transition temperature (T_{N-I}), but had a higher viscosity, and accordingly <u>had a response speed of a panel that was not</u> <u>sufficiently high</u>. (Note by the body: the underlines were applied by the body)

According to [0004] of the above indicated matters (11a), it is acknowledged that the following was known by a person skilled in the art before the filing of the Application; "a low-viscosity liquid crystal composition can be obtained by increasing the content rate of a bicyclohexane derivative or the like consisting of a cyclohexane ring having a small Δn value"; however, "when the content rate of a bicyclohexane derivative is increased, it is difficult to reduce the lower limit temperature of a nematic phase (T-n), and accordingly it is difficult to obtain a liquid crystal composition having a wide nematic phase temperature range." In addition, according to [0006], "liquid crystal compositions whose liquid crystal temperature ranges are adjusted using a tetracyclic compound are already known"; however, "these compositions have a viscosity that is not sufficiently low to respond to a response speed." Meanwhile, it is acknowledged that, according to the above indicated matters (11b), the object of the invention according to the original application is "to provide a liquid crystal composition for an active matrix liquid crystal display element, the composition having a wide liquid crystal phase temperature range and a low viscosity," and according to the above indicated matters (11c), predetermined amounts of bicyclohexane compound and tetracyclic compound are used together as means for solution.

In addition, according to the above indicated matters (11d), "having a wide liquid crystal phase temperature range" in the invention relating to the original application is understood as "a nematic phase-isotropic liquid phase transition temperature (T_{N-I}) is 70 degrees C or more" and "a solid phase or smectic phase-nematic phase transition temperature ($T_{\rightarrow N}$) is -20 degrees C or less." Meanwhile, there is no description as to the degree meant by "having a low viscosity" in the invention relating to the original application. In addition, according to [Table 1] and [Table 2] in the above indicated matters (11e), Examples 1 to 3 (No. 1 to No. 3) have rotation viscosities $\gamma 1$ of 33 to 35, and η of 9.4 to 9.6, η indicating an ordinary viscosity (e.g., see Japanese Unexamined Patent Application Publication No.2005-187604, paragraph [0038]). Meanwhile, Comparative Examples 1 to 3 have rotation viscosities $\gamma 1$ of 37 to 39, and η of 10.0 to 10.6. At [0041], there is a description "Comparative Examples 1 to 3 each contain 30% of a first component, and have higher viscosities" (it is to be noted that because the demandee states that "a liquid crystal composition containing 30% of 0d1-Cy-Cy-3 'has a higher viscosity' than the liquid crystal compositions according to Examples 1 to 3" on page 9 in the written statement dated October 19, 2016, the description in [0041] is presumed to mean that "Comparative Examples 1 to 3... have higher viscosities than Examples 1 to 3").

Meanwhile, according to the above indicated matters (11f), Comparative Examples 4 and 9 have η of 11 and 17, η being understood as a viscosity, and according to [0044], the nematic liquid crystal composition according to Comparative Example 4 (R4) had a higher viscosity, and accordingly had "a response speed of a panel that was not sufficiently high," and according to [0050], there is a description "the nematic liquid crystal composition according to Comparative Example 9 (R9) had...a higher viscosity, and accordingly had a response speed of a panel that was not sufficiently high" (on the analogy of the above-described examination results, the description at [0044] is presumed to mean "the nematic liquid crystal composition according to Comparative Example 4 (R4) had a higher viscosity than Examples 1 to 3, and accordingly had a response speed of a panel that was not sufficiently high" and the description at [0050] is presumed to mean "the nematic liquid crystal composition according to Comparative Example 9 (R9) had...a higher viscosity than Examples 1 to 3, and accordingly had a response speed of a panel that was not sufficiently high."). Similarly, Comparative Examples 5 to 8 have rotation viscosities $\gamma 1$ of 98~108, and according to [0047], there is a description "the nematic liquid crystal compositions according to Comparative Examples 5 to 8 (R5 to R8)... had higher viscosities, and accordingly had response speeds of a panel that were not sufficiently high" (on the analogy of the above-described examination results, the description in [0047] is presumed to mean "the nematic liquid crystal compositions according to Comparative Examples 5 to 8 (R5 to R8) had higher viscosities than Examples 1 to 3, and accordingly had response speeds of a panel that were not sufficiently high.").

That is, according to [0044], [0047], and [0050], when the rotation viscosities $\gamma 1$ are 98~108, or the viscosities η are 11 and 17, the evaluations "a response speed of a panel was not sufficiently high" are made. Thus, considering this description in combination with the description at the above indicated matters (11a), [0003] "a demand for a liquid crystal composition having a reduced viscosity is increasing in order to enhance the response speed of a display," it is not acknowledged that the compositions that have high viscosities to the extent that "the response speed of a display cannot be enhanced" can solve the object described in above indicated matters (11b), so that it is acknowledged that negative evaluations had been definitely made on at least the compositions that had high rotation viscosities $\gamma 1$ about 98~108, or high viscosities η about 11 and 17 in the original application.

However, while Examples 1 to 3 and Comparative Examples 1 to 3 respectively have rotation viscosities γ 1 of "33 to 35" and "37 to 39," and respectively have η , which is understood as a viscosity, of "9.4 to 9.6" and "10.0 to 10.6," where the Examples are lower in both, and actually an evaluation "Comparative Examples 1 to 3 had higher viscosities than Examples 1 to 3" is made in [0041], the description in [0041] is different from the descriptions in [0044], [0047], and [0050], and is only to give an evaluation that Comparative Examples 1 to 3 have high viscosities relative to Examples 1 to 3. And thus it should not be acknowledged that Comparative Examples 1 to 3 do not solve the problem to be solved shown in above indicated matters (11b). At least, there is no negative indication against the problem to be solved.

(1-3) Summary

Therefore, the body admits that "30%" of the content of the compound of the structural formula (1) is disclosed in the specification of the original application as Comparative Examples 1 to 3 and Comparative Examples 1 to 3, which are in consistent with the essence of the invention disclosed in the specification of the original application.

(2) Relation between the filing date of the Patent and the date of publication of the following publication

A11: Japanese Unexamined Patent Application Publication No.2007-119672

As described above, while the patent is regarded as having been filed on October 31, 2005, which is the filing date of the original application, A11 is a publication of an unexamined patent application published on May 17, 2007, so that A11 is not a publication distributed before the regarded filing date of the Patent.

Therefore, patentability of the Patent cannot be examined based on A11.

(3) Summary

As described above, because the inventions relating to the claims are not the inventions described in A11, the Inventions 1 to 5 do not fall under Article 29(1)(iii) of the Patent Act. In addition, since the Inventions 1 to 5 could not be provided easily by a person skilled in the art based on the inventions described in A11, they are not inventions that should not be granted a patent in accordance with the provisions of Article 29(2) of the Patent Act, and their registration does not constitute a violation of the provisions of the same article of the same act, and accordingly do not fall under

Article 123(1)(ii) and should not be invalidated.

2. Reason for invalidation 1-1

(1) Publications

A1: International Publication No. WO2005/017067

A21: Okamura, Masaya et al., "the 4th lecture in the course of lectures on liquid crystal science experiment: Technical Knowledge for Measurement of Liquid Crystal Property (2)", JLCS journal "EKISHO", The Japanese Liquid Crystal Society, October 25, 2002, volume 6, no. 4, pp. 44 to 53

A22: Ishihara, Shoichi, "Factors Influencing the Voltage Holding Ratio", Sharp Technical Journal, August 2005, no. 92, pp. 11 to 16

(2) Inventions described in Publications

1. Matters described in A1 (A Japanese translation of A1 is provided. The translation is cited from PCT International Application Publication No. JP-T-2007-501301, which is a corresponding Japanese publication of A1 and the portions describing about A1 are also indicated therein)

(1a) The scope of claims

"[Claim 1]

A liquid crystalline medium based on a mixture of polar compounds having positive dielectric constant anisotropy, characterized by comprising one or more compounds of the formula I

[Chemical formula 1]



1

and one or more compounds of formula IA, [Chemical formula 2]



where the proportion of the compounds of the formula I in the medium is at least 18% by weight, and in which the individual radicals have the following meanings:

 \mathbf{R}^1 is an alkenyl radical having from 2 to 8 carbon atoms,

 R^2 is H, an alkyl radical having from 1 to 15 carbon atoms which is halogenated, substituted by CN or CF₃, or unsubstituted, where, in addition, one or more CH₂ groups in these radicals may each, independently of one another, be replaced by [Chemical formula 3]

-C=C-, -CO-, -CH=CH-, -O-, S- st.ll -

または or

in such a way that O atoms are not linked directly to one another,

X¹ is an alkyl radical, alkenyl radical, alkoxy radical, or alkenyloxy radical, each having up to 6 carbon atoms, in the case where a=1 also F, Cl, CN, SF₅, SCN, NCS or OCN,

X² is F, Cl, CN, SF₅, SCN, NCS, OCN, a halogenated alkyl radical, halogenated alkenyl radical, halogenated alkoxy radical, or halogenated alkenyloxy radical, each having up to 6 carbon atoms,

 Z^1 and Z^2 are each, independently of one another, -CF₂O-, -OCF₂- or a single bond, where $Z^{1\neq}Z^2$,

a is 0 or 1, and [Chemical formula 4]

A)-BLU-(B)

および and

and are each, independently of one another,

[Chemical formula 5] -(H) - (O) - (O)-{o}- #tett-{o}-

または or

L1-4 are each, independently of one another, H or F." "[Claim 3]

Liquid crystalline medium according to claim 1 or 2, characterized in comprising one or more compounds of the formulae I-1 to I-5 [Chemical formula 12]



in which alkenyl is an alkenyl radical having from 2 to 8 carbon atoms and alkyl is a straight-chain alkyl radical having 1-15 carbon atoms."

(1b) Page 11, lines 14 to 34 "[0035]

The liquid-crystal mixtures according to the invention enable a significant widening of the available parameter latitude. The achievable combinations of clearing point, viscosity at low temperature, thermal and UV stability, and dielectric constant anisotropy are far superior to those of previous materials from the prior art. [0036]

Compared with the mixtures disclosed in EP 1 046 694 A1, the mixtures according to the invention have a higher clearing point, low γ 1 values, lower values for the flow viscosity, and very high values for the VHR at 100 degrees C. The mixtures according to the invention are preferably suitable as TN-TFT mixtures for notebook PC applications with 3.3 and 2.5 V drivers.

[0037]

The liquid-crystal mixtures according to the invention, while retaining the

nematic phase down to -30 degrees C, particularly preferably down to -40 degrees C, enable clearing points above 70 degrees C, preferably above 75 degrees C, particularly preferably \geq 80 degrees C, simultaneously dielectric constant anisotropy values $\Delta \epsilon$ of \geq 6, preferably \geq 8, and a high value for the specific resistance to be achieved, enabling excellent STN and MLC displays to be obtained. In particular, the mixtures are characterized by low operating voltages. The TN thresholds are below 1.5 V, preferably below 1.4 V, particularly preferably <1.3 V."

The flow viscosity v20 at 20 degrees C is preferably < 20 mm².s-1, particularly preferably < 19 mm².s-1. The rotational viscosity γ 1 at 20 degrees C of the mixtures according to the invention is preferably <140 mPa.s, particularly preferably <120 mPa.s. The nematic phase range is preferably at least 100 degrees C, in particular at least 110 degrees C. This range preferably extends at least from -40 degrees C to +80 degrees C."

(1c) Page 13, lines 1 to 18 "[0042]

Measurements of the voltage holding ratio (HR) [S. Matsumoto et al., Liquid Crystals 5, 1320 (1989); K. Niwa et al., Proc. SID Conference, San Francisco, June 1984, p. 304 (1984); G. Weber et al., Liquid Crystals 5, 1381 (1989)] have shown that mixtures according to the invention comprising compounds of the formulae I and IA exhibit a significantly smaller decrease in the HR with increasing temperature than do analogous mixtures comprising cyanophenylcyclohexanes of the formula: [Chemical formula 6]

or esters of the formula [Chemical formula 7]

instead of the compounds of the formula IA. [0043]

The mixtures according to the invention preferably comprise little ($\leq 20\%$, in particular $\leq 10\%$) or no nitrites. The holding ratio of the mixtures according to the invention at 20 degrees C is at least 98%, preferably > 99%. The UV stability of the mixtures according to the invention is also considerably better; i.e., they exhibit a

significantly smaller decrease in the HR on exposure to UV."

(1d) Page 30, lines 21 to 29

"[0069]

... (omitted)...

The proportion of compounds of the formulae IA and I to VI together in the mixture as a whole is at least 50% by weight;

The proportion of compounds of the formula I in the mixture as a whole is \geq 18% by weight, preferably \geq 20% by weight, in particular \geq 22% by weight, very particularly preferably \geq 24% by weight;

The proportion of compounds of the formula IA in the mixture as a whole is from 5 to 40% by weight, particularly preferably from 10 to 30% by weight;

The proportion of compounds of the formulae II to VI in the mixture as a whole is from 30 to 80% by weight;"

(1e) Page 66, line 27 to page 67, line 2

"[0131]

The following examples are intended to explain the invention without restricting it. Above and below, percentages are percent by weight. All temperatures are indicated in degrees C. m.p. denotes melting point, and cl.p. denotes clearing point. Furthermore, C=crystalline state, N=nematic phase, S=smectic phase, and I=isotropic phase. The data between these symbols represent the transition temperatures. Δn denotes optical anisotropy (589 nm, 20 degrees C), and $\Delta \varepsilon$ denotes the dielectric constant anisotropy (1 kHz, 20 degrees C). The flow viscosity v20 (mm²/sec) is determined at 20 degrees C. The rotational viscosity $\gamma 1$ (mPa.s) is likewise determined at 20 degrees C."

2. Matters described in A21

(21a) From the 9th to 15^{th} lines from the bottom of the right column of page 51 to the 9th to 14^{th} lines of the left column of page 52

"5.2 Voltage Holding Ratio (VHR)

In AM-LCD, most parts of each pixel are made of a liquid crystal material. Thus, in order to achieve high contrast and reliability, good display capability, and the like, the liquid crystal material needs to hold the electric charge during a constant period of time (generally using 60 Hz in conformance with the signals of NTSC system) by minimizing the current of leak from between the electrodes."

"While the temperature conditions at measurement are basically arbitrary, a clear

difference cannot be always obtained (e.g., less than 0.1%) at measurement at normal temperature in the case of a liquid crystal material having high reliability as required these days. In this case, a clearer difference can sometimes be recognized, usually by performing measurement at high temperature (note that the high temperature is TNI of the liquid crystal material or less)."

3. Matters described in A22

(22a) The 13 to 17th lines from the bottom of the right column of page 13

"While a VHR is decided by CR independently from a p-type liquid crystal molecule-content ratio (the size of dielectric constant anisotropy $\Delta \varepsilon$ of a liquid crystal material) in a cell with no oriented film, there is a correlation between $\Delta \varepsilon$ and a VHR in a cell with an oriented film, and in addition, an F-based liquid crystal indicates a higher voltage holding ratio than a CN-based liquid crystal (see FIG. 9)."

(22b) FIG. 9



(3) The invention described in A1

A According to the above indicated matters (1a), A1 is recognized to describe, as Claim 3 dependent from Claim 1, "A liquid crystalline medium based on a mixture of polar compounds having positive dielectric constant anisotropy, characterized by comprising one or more compounds of the formula I (the formula is omitted here) and one or more compounds of formula IA (the formula is omitted here), where the proportion of the compounds of the formula I in the medium is at least 18% by weight, and comprises one or more compounds of the formulae I-1 to I-5 (as compounds represented by formula I)."

B According to the above indicated matters (1d), it can be said that in the liquid crystalline medium described in A1, the proportion of compounds of the formula I in the mixture as a whole is very particularly preferably " $\geq 24\%$ by weight"

C According to paragraph [0037] at the above indicated matters (1b), the liquid crystalline medium described in A1 is understood to be a nematic liquid crystalline medium.

D According to paragraph [0037] at the above indicated matters (1b), the liquid crystalline medium described in A1 has "clearing points above 70 degrees C, preferably above 75 degrees C, particularly preferably \geq 80 degrees C."

E According to paragraph [0043] at the above indicated matters (1c), the liquid crystalline medium described in A1 can be said to have a voltage holding ratio at 20 degrees C of "at least 98%, preferably > 99%."

According to the considerations of the above A to E, A1 is recognized to describe

"A nematic liquid crystalline medium based on a mixture of polar compounds having positive dielectric constant anisotropy, characterized by comprising one or more compounds of the formula I (the formula is omitted here), and one or more compounds of formula IA (the formula is omitted here), where the proportion of the compounds of the formula I in the medium is at least 18% by weight, and preferably \geq 24% by weight, comprises one or more compounds of the formulae I-1 to I-5 (as compounds represented by formula I),

has clearing points above 70 degrees C, preferably above 75 degrees C, particularly preferably \geq 80 degrees C, and has a voltage holding ratio at 20 degrees C of at least 98%, preferably > 99%."

(hereinafter referred to as the "A1 invention")

(4) Comparison and examination

(4-1) Regarding the Invention 1

The Invention 1 and the A1 invention are compared. "The nematic liquid crystalline medium" in the A1 invention corresponds to "the nematic liquid crystal composition" in the Invention 1.

"Comprises one or more compounds of the formula I (the formula is omitted here)," "where the proportion of the compounds of the formula I in the medium is at least 18% by weight, and preferably $\geq 24\%$ by weight" in the A1 invention coincides with "comprising: 30% to 65% of a compound represented by a structural formula (1) (the formula is omitted here) as a first component," "comprising a specific amount of compound having an alkenyl group as a first component" in the Invention 1.

"Comprising one or more compounds of formula IA (the formula is omitted here)" in the A1 invention coincides with "comprising two or more kinds of compounds as a second component that are selected from a group consisting of compounds represented by a general formula (2)" in the Invention 1 in terms of "comprising two or more kinds of tetracyclic compounds as a second component."

It is obvious that "a clearing point" in a nematic liquid crystalline medium is synonymous with a nematic-isotropic transition temperature, so that "has a clearing point above 70 degrees C, preferably above 75 degrees C, particularly preferably ≥ 80 degrees C" in the A1 invention overlaps with "a nematic-isotropic transition temperature is 68 degrees C to 120 degrees C" in the Invention 1 in terms of "having a nematicisotropic transition temperature of 70 degrees C to 120 degrees C."

In view of the above, the Invention 1 coincides with the A1 invention in terms of being "a nematic liquid crystal composition comprising a specific amount of compound having an alkenyl group as a first component, comprising two or more kinds of tetracyclic compounds as a second component, and having a nematic-isotropic transition temperature of 70 degrees C to 120 degrees C"; however they are different from each other in the following features.

<The different feature 1-1>

In the Invention 1, the structure and the content of a compound having an alkenyl group are a "compound represented by a structural formula (1)"

[Chemical formula 1]

and "30% to 65%,"

whereas in the invention A1, the structure and the content of a compound having an alkenyl group are one or more compounds of the formula I,



in which the individual radicals have the following meanings:

R¹ is an alkenyl radical having from 2 to 8 carbon atoms,

X¹ is an alkyl radical, alkenyl radical, alkoxy radical, or alkenyloxy radical, each having up to 6 carbon atoms, in the case where a=1 also F, Cl, CN, SF₅, SCN, NCS or OCN,

a is 0 or 1,

L1-2 are each, independently of one another, H or F" and

"at least 18% by weight, and preferably $\geq 24\%$ by weight."

<The different feature 1-2>

In the Invention 1, the tetracyclic compound is "a compound selected from a group consisting of compounds represented by a general formula (2),

[Chemical formula 2]

$$R^{1}-B^{1}-L^{1}-B^{2}-L^{2}-B^{3}-L^{3}-\bigvee_{X^{3}}^{X^{1}}Q^{1}-X^{2}$$
 (2)

(in the formula, R^1 denotes one of an alkyl group having one to 15 carbon atoms and an alkenyl group having two to 15 carbon atoms, the groups being unsubstituted or having at least one halogen group as a substituent group, one or two or more CH_2 groups in these groups are optionally substituted by -O-, -S-, or -CO- independently such that oxygen atoms are not directly bonded to one another, and

 B^1 , B^2 , and B^3 each independently comprises groups selected from a group consisting of:

(a) a trans-1,4-cyclohexylene group; and

(b) a 1, 4-phenylene group (one CH_2 group, or two or more CH_2 groups

nonadjacent to each other, which are present in this group, are optionally substituted by -N-), the group (a) and the group (b) being optionally substituted by CH₃ or halogen, and

 L^1 , L^2 , and L^3 each independently denotes a single bond, - CH_2CH_2 -, - $(CH_2)_4$ -, - OCH₂-, -CH₂O-, -OCF₂-, -CF₂O-, or -C=C-,

Q¹ denotes -OCH₂-, -OCF₂-, -OCHF-, -CF₂-, or a single bond,

X¹ to X³ each independently denotes H, F, or Cl),"

whereas in the invention A1, "a compound of formula IA



and in which the individual radicals have the following meanings:

 R^2 is H, an alkyl radical having from 1 to 15 carbon atoms which is halogenated, substituted by CN or CF₃ or unsubstituted, where, in addition, one or more CH₂ groups in these radicals may each, independently of one another, be replaced by

[Chemical formula 3]

in such a way that O atoms are not linked directly to one another,

X² is F, Cl, CN, SF₅, SCN, NCS, OCN, a halogenated alkyl radical, halogenated alkenyl radical, halogenated alkoxy radical, or halogenated alkenyloxy radical, each having up to 6 carbon atoms,

 Z^1 and Z^2 are each, independently of one another, -CF₂O-, -OCF₂- or a single bond, where $Z^1 \neq Z^2$,

[Chemical formula 4]

and are each, independently of one another,

[Chemical formula 5]



または or

L3-4 are each, independently of one another, H or F."

<The different feature 1-3>

As for a voltage holding ratio, in the Invention 1, "the holding ratio (%) is kept 96% or more at 60 degrees C after being heated one hour at 150 degrees C (the holding ratio (%) : [voltage measured]/[voltage applied] (%) with initial voltage of 5V, 200 ms frame time, and pulse width of 64 μ s in a 6 μ m-in-thickness TN-LCD cell)" while in the A1 invention, "the voltage holding ratio at 20 degrees C is at least 98%, preferably > 99%."

<The different feature 1-4>

The Invention 1 is specified as being "(characterized by excluding

a liquid crystalline medium comprising one or two or more kinds of ester compounds, and comprising a mixture of a polar compound having positive dielectric constant anisotropy as a base material,

a liquid crystalline medium comprising one or more kinds of compounds having the following formula (the formula is omitted here), and having positive dielectric constant anisotropy based on the mixture of the compound, and

a polar compound mixture-based liquid crystalline medium comprising PPGU-V2-F (the formula is omitted here))", while the A1 invention is not specified to the above-described matters.

Regarding < the different feature 1-3>

While A1 invention has "the voltage holding ratio at 20 degrees C is at least 98%, preferably > 99%," it does not disclose what the holding ratio (%) of A1 invention will be at 60 degrees C after being heated one hour at 150 degrees C (the holding ratio (%) : [voltage measured]/[voltage applied] (%) with initial voltage of 5V, 200 ms frame time, and pulse width of 64 μ s in a 6 μ m-in-thickness TN-LCD cell). According to the above indicated matters (21a), it is known that "while a clear difference cannot be

always obtained at measurement at normal temperature..., a clearer difference can sometimes be recognized, usually by performing measurement at high temperature (note that the high temperature is TNI or less of the liquid crystal material)", so that it cannot be immediately said, only because the voltage holding ratio at 20 degrees C is at > 99%, that a holding ratio (%) at 60 degrees C after being heated one hour at 150 degrees C is also the same or at least 96% or more. In particular, according to the above indicated matters (22a), it is known "there is a correlation between $\Delta \varepsilon$ and a VHR in a cell with an oriented film," which can be said to mean, according to FIG. 9 in "22b," that as $\Delta \varepsilon$ increases, a VHR decreases (the measurement conditions for holding ratio (%) in the Invention 1 is to use a "TN-LCD (twisted nematic liquid crystal display device)," which is recognized as an oriented film). According to paragraph [0037] in the above indicated matters (1b) and paragraph [0131] in the above indicated matters (1e), the A1 invention is acknowledged to have "dielectric constant anisotropy values $\Delta \varepsilon$ of ≥ 6 , preferably ≥ 8 (1 kHz, 20 degrees C)," while according to paragraph [0030] in the specification of the Patent, the Invention 1 preferably has "dielectric constant anisotropy $(\Delta \epsilon)$ at 25 degrees C of 2.5 to 7.0, and more preferably 3.0 to 5.0," and according to [Table 1] in paragraph [0037] and [Table 2] in paragraph [0040] of the same, $\Delta \varepsilon$ are actually adjusted to 3.0 to 3.1 in Examples 1 to 6, and in view of this, $\Delta \varepsilon$ in the A1 invention are recognized to be larger values to constant extents than $\Delta \varepsilon$ in the Invention 1, and if so, the voltage holding rate of the A1 invention could be lower than that of the Invention 1. If so, "a holding ratio (%) at 60 degrees C after being heated one hour at 150 degrees C" cannot be presumed to mean the same level as the holding ratio of the Invention 1, and thus, it cannot be said that there is a high possibility of 96% or more.

In addition, having a high voltage holding ratio is recognized to be preferable as described in the above indicated matters (1c), and having a high voltage holding ratio under high temperature is recognized to be preferable as the state of the art at the time of filing of the present application as described in the above indicated matters (21a) in A1. In view of the above, it can be said that a person skilled in the art could have easily conceived of increasing a high voltage holding ratio under high temperature up to a high level in practicing the A1 invention; however, no specific evidence of common general technical knowledge that can improve "the holding ratio (%)" to 96% or more at 60 degrees C after being heated one hour at 150 degrees C (the holding ratio (%) : [voltage measured]/[voltage applied] (%) with initial voltage of 5V, 200 ms frame time, and pulse width of 64 μ s in a 6 μ m-in-thickness TN-LCD cell) can be found in the art could have easily conceived of a liquid crystalline medium having the configuration

according to the different feature 1-3 in the A1 invention.

At "e. Examination on different features 1-B" on pages 17 to 18 in the oral proceedings statement brief, the demandant alleges, while citing the description in the above indicated matters (1c), that "the A1 invention in which a voltage holding ratio at 20 degrees C is at least 98%, preferably > 99% also describes that reduction of a HR associated with the increase in temperature is significantly small, which thus means to be equal to keeping a holding ratio (%) at 60 degrees C after being heated one hour at 150 degrees C 96% or more in the corrected invention 1 of the case, so that this is not a substantial different feature. Alternatively, a person skilled in the art could have easily conceived of limiting a holding ratio (%) at 60 degrees C after being heated one hour at 150 degrees C to 96% or more in the A1 invention X."

However, described in the above indicated matters (1c) is only that the A1 invention including a compound represented by formula IA has significantly smaller reduction of a voltage holding ratio associated with the increase in temperature than similar liquid crystalline media including cyanophenylcyclohexanes represented by [Chemical formula 6] (the formula is omitted here) or esters represented by [Chemical formula 7] (the formula is omitted here), and the above indicated matters (1c) do not describe that reduction of a voltage holding ratio of the A1 invention containing a compound represented by formula IA after the temperature rise is significantly smaller than that of the A1 invention before the temperature rise, so that it is impossible to presume that "a holding ratio at 60 degrees C after being heated one hour at 150 degrees C" would be kept 96% or more in the A1 invention.

In addition, as described in the above indicated matters (21a), it had been recognized before filing of the present application that having a high voltage holding ratio not only at normal temperature but also under high temperature is preferable in the field of a liquid crystal composition used in a liquid crystal element, so that it is apparent to a person skilled in the art that not only having a high voltage holding ratio at 20 degrees C but also having a high voltage holding ratio under high temperature were preferable in the A1 invention; however, as discussed above, there is no description about a means for achieving this in A1, or there is no evidence to prove such a means as common general technical knowledge. Thus, it cannot be said that "a person skilled in the art could have easily conceived of limiting a holding ratio (%) at 60 degrees C after being heated one hour at 150 degrees C to 96% or more."

Therefore, without examining the different features 1-1, 1-2, and 1-4, the

Invention 1 is not an invention that a person skilled in the art could have easily conceived of based on the A1 invention.

(4-2) Regarding the Inventions 2 to 5

While the Inventions 2 to 5 are to limit the Invention 1, it has been already discussed in the above described item (4-1) that the Invention 1 is not an invention that could have been easily conceived of based on the A1 invention.

Because of the same reason, the Inventions 2 to 5 are not inventions that could have been easily conceived of based on the A1 invention.

(5) Summary of reason for invalidation 1-1

As described above, since the Inventions 1 to 5 are not inventions that could have been easily conceived of by a person skilled in the art based on the invention described in A1, a patent for the Invention is not what cannot be granted in accordance with the provisions of Article 29(2) of the Patent Act. The patent for inventions according to Claims 1 to 5 after the correction of the case was not registered in such a way as to constitute a violation of the provisions of the same article of the same act, and accordingly does not fall under Article 123(1)(ii) and should not be invalidated.

3. Reason for invalidation 1-3(1) PublicationA3: Japanese Unexamined Patent Application Publication No. 2005-220355

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(2) Matters described in A3
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(3a)

"[Claim 1]

A liquid crystalline medium comprising the following components (A) to (D): a component (A): a dielectrically positive component comprising one or two or more types of dielectrically positive compounds represented by the formula I and one or two or more types of dielectrically positive compounds selected from the groups represented by the formula II and formula III, the component (A):

[Chemical formula 1]



(in the formulae, R1, R2, and R3 each independently denotes one of alkyl, alkoxy, fluorinated alkyl, and the fluorinated alkoxy having one to 7 carbon atoms, or alkenyl, alkenyloxy, alkoxy alkyl, or fluorinated alkenyl having two to 7 carbon atoms,

[Chemical formula 2]





are each independent, and

[Chemical formula 3] when two of



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are present, they are each independent, and they are

[Chemical formula 4]





and Z^{21} , Z^{22} , and Z^3 each independently denotes, and Z^{21} and two Z^3 each independently denotes when they are present, -CH₂CH₂-, -COO-, trans--CH=CH-, trans--CF=CF-,-CH₂O-, -CF₂O-, or a single bond,

n and m are each independently zero, 1, or 2,

 X^1 , X^2 , and X^3 each independently denotes halogen, halogenated alkyl or alkoxy having one to three carbon atoms, or halogenated alkenyl or alkenyloxy having two or three carbon atoms,

Y21 and Y22 are each, independently of one another, H or F, and Y31 and Y32 are each, independently of one another, H or F, where when



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both Y31 and Y32 are either H or F;

a component (B): a dielectrically neutral component as an optional component, the component (B);

a component (C): a dielectrically positive component as an optional component, the component (C); and

a component (D): a dielectrically negative component as an optional component, the component (D)"

"[Claim 6]

The liquid crystalline medium according to any one of Claims 1 to 5, the liquid crystalline medium comprising a dielectrically neutral component, the component (B) comprising one or two or more types of compounds selected from the group consisting of compounds represented by the following formulae IV-1, IV-4, IV-6, and IV-7:

[Chemical formula 11]



(in the formula, R^{41} and R^{42} have meanings defined in Claim 2.)" (Note for the body: in Claim 2, " R^{41} and R^{42} " have the same meaning as the meaning of R^1 in the formula I in Claim 1.)

(3b)

"[0127]

The component (B) is used at a concentration of 0% to 45% with respect to the total of the mixture, preferably at a concentration of 10% to 40%, more preferably at a concentration of 15% - 35%, and still more preferably 20% to 30%."

(3c)

"[0138]

 $\Delta \varepsilon$ of the liquid crystal medium of the present invention at 1 kHz and 20 degrees C is preferably 4.0 or more, more preferably 6.0 or more, most preferably 10.0 or more, and in particular 6.0 to 20.0."

(3d) "[0142]

The nematic phase of the medium of the present invention spreads at least from zero degrees C to 70 degrees C, preferably at least from -20 degrees C to 75 degrees C, the most preferably at least from -30 degrees C to 80 degrees C, and in particular at least from -40 degrees C to 85 degrees C (or until 90 degrees C). 'A nematic phase spreads at least from a low-temperature limit to a high-temperature limit' means that a nematic phase spreads to the low-temperature limit, further exceeding the low-temperature limit, and spreads to the high-temperature limit, or exceeding the high-temperature limit."

(3) Inventions described in A3

A According to the above indicated matters (3a), "a liquid crystalline medium comprising the following components (A) to (D):

a component (A): a dielectrically positive component comprising one or two or more types of dielectrically positive compounds represented by the formula I (the formula is omitted here) and one or two or more types of dielectrically positive compounds selected from the groups represented by the formula II and formula III, the component (A):

a component (B): a dielectrically neutral component the component (B) comprising one or two or more types of compounds selected from the group consisting of compounds represented by the formulae IV-1, IV-4, IV-6, and IV-7 (the formulae are omitted here), the component B:

a component (C): a dielectrically positive component as an optional component, the component (C); and

a component (D): a dielectrically negative component as an optional component, the component (D)" is recognized to be described in A3 as Claim 6 which is dependent from Claim 1.

B According to the above indicated matters (3b), in the liquid crystalline medium in A3, the component (B) can be said to be "used at a concentration of 0% to 45% with respect to the total of the mixture, preferably at a concentration of 10% to 40%, more preferably at a concentration of 15% to 35%, and still more preferably 20% to 30%."

C According to the above indicated matters (3d), the liquid crystalline medium in A3 can be said to be a nematic liquid crystalline medium.

D According to the above indicated matters (3d), the upper limit temperature of the nematic phase in the liquid crystalline medium in A3 can be said to be at least 70 degrees C.

According to the considerations in the above-described items A to D, "a nematic liquid crystalline medium in which a nematic phase has an upper limit temperature of at least 70 degrees C, the medium comprising the following components (A) to (D):

a component (A): a dielectrically positive component comprising one or two or more types of dielectrically positive compounds represented by the formula I (the formula is omitted here) and one or two or more types of dielectrically positive compounds selected from the groups represented by the formula II and formula III, the component (A):

a component (B): a dielectrically neutral component comprising one or two or more types of compounds selected from the group consisting of compounds represented by the formulae IV-1, IV-4, IV-6, and IV-7 (the formulae are omitted here), and used at a concentration of 0% to 45% with respect to the total of the mixture, preferably at a concentration of 10% to 40%, more preferably at a concentration of 15% to 35%, and still more preferably 20% to 30%, the component B:

a component (C): a dielectrically positive component as an optional component, the component (C); and

a component (D): a dielectrically negative component as an optional component, the component (D)" is recognized to be described in A3 (hereinafter referred to as the "A3 invention").

(4) Comparison and examination

(4-1) Regarding the Invention 1

The Invention 1 and the A3 invention are compared.

"The nematic liquid crystalline medium" in the A3 invention corresponds to "the nematic liquid crystal composition" in the Invention 1.

"A nematic phase has an upper limit temperature of at least 70 degrees C" in the A3 invention overlaps with "a nematic-isotropic transition temperature is 68 degrees C to 120 degrees C" in the Invention 1 when "a nematic-isotropic transition temperature is 70

degrees C to 120 degrees C."

In view of the above, the Invention 1 coincides with the A3 invention in terms of being "a nematic liquid crystal composition having a nematic-isotropic transition temperature of 70 degrees C to 120 degrees C"; however they are different from each other in the following features.

<The different feature 3-1>

The Invention 1 is specified to contain "30% to 65% of a compound represented by a structural formula (1)":

[Chemical formula 1]

whereas the invention A3 comprises "one or two or more types of compounds selected from the group consisting of compounds represented by the formulae IV-1, IV-4, IV-6, and IV-7, and used at a concentration of 0% to 45% with respect to the total of the mixture, preferably at a concentration of 10% to 40%, more preferably at a concentration of 15% to 35%, and still more preferably 20% to 30%.



(in the formula, R⁴¹ and R⁴² each independently denotes alkyl, alkoxy, fluorinated alkyl, or fluorinated alkoxy having one to seven carbon atoms, and alkenyl, alkenyloxy, alkoxy alkyl, or fluorinated alkenyl having two to seven carbon atoms.".

<The different feature 3-2>

The Invention 1 is specified to contain two or more kinds of compounds that are selected from a group consisting of compounds represented by a general formula (2),

[Chemical formula 2]

$$R^{1}-B^{1}-L^{1}-B^{2}-L^{2}-B^{3}-L^{3}-\bigvee_{X^{3}}^{X^{1}}Q^{1}-X^{2}$$
 (2)

(in the formula, R^1 denotes one of an alkyl group having one to 15 carbon atoms and an alkenyl group having two to 15 carbon atoms, the groups being unsubstituted or having at least one halogen group as a substituent group, one or two or more CH_2 groups in these groups are optionally substituted by -O-, -S-, or -CO- independently such that oxygen atoms are not directly bonded to one another, and

 B^1 , B^2 , and B^3 each independently comprises groups selected from a group consisting of:

(a) a trans-1,4-cyclohexylene group; and

(b) a 1, 4-phenylene group (one CH_2 group, or two or more CH_2 groups nonadjacent to each other, which are present in this group, are optionally substituted by -N-), the group (a) and the group (b) being optionally substituted by CH_3 or halogen, and

 L^1 , L^2 , and L^3 each independently denotes a single bond, "- CH₂CH₂-, -(CH₂)₄-, -OCH₂-, -CH₂O-, -OCF₂-, -CF₂O-, or -C=C-,

Q¹ denotes -OCH₂-, -OCF₂-, -OCHF-, -CF₂-, or a single bond,

X¹ to X³ each independently denotes H, F, or Cl),

while the A3 invention contains "one or two or more types of dielectrically positive compounds selected from the groups represented by the formula II and formula III,



(in the formulae, R2, and R3 each independently denotes one of alkyl, alkoxy, fluorinated alkyl, and the fluorinated alkoxy having one to 7 carbon atoms, or alkenyl, alkenyloxy, alkoxy alkyl, or fluorinated alkenyl having two to 7 carbon atoms,



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are present, they are each independent, and they are



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and Z^{21} , Z^{22} , and Z^3 each independently denotes, and Z^{21} and two Z^3 each independently denote when they are present, -CH₂CH₂-, -COO-, _{trans}--CH=CH-, _{trans}--CF=CF-, -CH₂O-, -CF₂O-, or a single bond,

n and m are each independently zero, 1, or 2,

 X^2 and X^3 each independently denotes a halogen, halogenated alkyl or alkoxy

having one to three carbon atoms, or halogenated alkenyl or alkenyloxy having two or three carbon atoms,

Y21 and Y22 are each, independently of one another, H or F, and

Y31 and Y32 are each, independently of one another, H or F, where when



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both Y31 and Y32 are either H or F.)".

<The different feature 3-3>

The Invention 1 is specified to "a holding ratio (%) at 60 degrees C after being heated one hour at 150 degrees C (a value that is obtained by expressing, in percentage, the ratio between an initial applied voltage and a measured voltage that is measured at a frame time of 200 ms at a pulse width of 64 μ s when the composition is injected into a TN-LCD having a cell thickness of 6 μ m to be subjected to application of five V) is kept 96% or more," whereas the A3 invention is not specified to the above-described matters.

<The different feature 3-4>

The Invention 1 is specified as being "characterized by excluding a liquid crystalline medium comprising one or two or more kinds of ester compounds, and comprising a mixture of a polar compound having positive dielectric constant anisotropy as a base material, a liquid crystalline medium comprising one or more kinds of compounds having the following formula, and having positive dielectric constant anisotropy based on the mixture of the compound, and a polar compound mixture-based liquid crystalline medium comprising PPGU-V2-F (the formulae are omitted here)," whereas the A3 invention is not specified to the above-described matters.

Regarding < the different feature 3-3>

A3 does not describes about a voltage holding ratio, and it is unknown what voltage holding ratio the A3 invention has (while it is understood that the value of dielectric constant anisotropy $\Delta\epsilon$ of the A3 invention is adjusted to be high to some extent according to the above indicated matters (3c), the voltage holding ratio of the A3 invention cannot be inferred to be high, because as the value of dielectric constant anisotropy $\Delta\epsilon$ is higher, the voltage holding ratio tends to be more reduced according to the above indicated matters (22a) and (22b)), but having a high voltage holding ratio under high temperature was recognized to be preferable at the time of filing of the present application as described in the above indicated matters (21a). In view of the above, it can be said that a person skilled in the art could sufficiently recognize motivation to try to increase the voltage holding ratio under high temperature in the A3 invention.

However, no specific evidence of common general technical knowledge that can improve "the holding ratio (%)" in the embodiments in the A3 invention to 96% or more at 60 degrees C after being heated one hour at 150 degrees C (the holding ratio (%) : [voltage measured]/[voltage applied] (%) with initial voltage of 5V, 200 ms frame time, and pulse width of 64 μ s in a 6 μ m-in-thickness TN-LCD cell) can be found, so that it cannot be said that a person skilled in the art could have easily conceived of a liquid crystalline medium having the configuration according to the different feature 3-3 in the A3 invention.

In "g. Examination on different features 3-B" on page 24 in the oral proceedings statement brief, the demandant alleges that "A3 describes about a liquid crystalline medium, in particular, an active matrix-driven display ([0001]), and liquid crystal materials having higher holding ratio are more required in general in terms of reliability among active matrix-driven positive liquid crystal materials (...), so that a person skilled in the art could have easily conceived of achieving a holding ratio of 96% or more in the A3 invention X."

It is true that higher voltage holding ratios are preferable also in the A3 invention; however there is no description about the means for achieving this in A3, or there is no evidence to prove the means as common general technical knowledge as discussed above in "Regarding <the different feature 3-3>." Thus, it cannot be said that "a person skilled in the art could have easily conceived of achieving a holding ratio (%)" at 60 degrees C after being heated one hour at 150 degrees C of 96% or more."

Thus, it cannot be said to be easy even for a person skilled in the art to conceive

of the configuration according to the different feature 3-3 in the A3 invention.

Therefore, without examining the different features 3-1, 3-2, and 3-4, the Invention 1 is not an invention that a person skilled in the art could have easily conceived of based on the A3 invention.

(4-2) Regarding < the Inventions 2 to 5>

The Inventions 2 to 5 are to limit the Invention 1; however, it has been already examined at the above item (4-1) that the Invention 1 is not an invention that a person skilled in the art could have easily conceived of based on the A3 invention.

Thus, for the same reason, the Inventions 2 to 5 are not inventions that a person skilled in the art could have easily conceived of based on the A3 invention.

(5) Summary of reason for invalidation 1-3

As described above, since the Inventions 1 to 5 are not inventions that could have been easily conceived of by a person skilled in the art based on the invention described in A3, a patent for the Invention is not what cannot be granted in accordance with the provisions of Article 29(2) of the Patent Act. The patent for inventions according to Claims 1 to 5 after the correction of the case was not registered in such a way as to constitute a violation of the provisions of the same article of the same act, and accordingly does not fall under Article 123(1)(ii) and should not be invalidated.

4. Reason for invalidation 3

(1) Requirements stipulated in Article 36(6)(i) and 36(4)(i) of the Patent Act.

(1-1) The problem to be solved by the Invention

Referring to paragraph [0009] and the like in the specification of the Patent, it is recognized that the problem to be solved by the Invention is to "provide a liquid crystal composition for an active matrix liquid crystal display element, the composition having a wide liquid crystal phase temperature range and a low viscosity."

(1-2) The second component and the third component

The specification of the Patent describes in paragraphs [0010] to [0012] "As a result of keen examinations to solve the problem, there is provided a liquid crystal composition for an active matrix liquid crystal display element, the liquid crystal composition comprising: 35% to 65% of a compound represented by a structural formula (1) (the formula is omitted here) as a first component, one or two or more kinds

of compounds as a second component that are selected from a group consisting of compounds represented by a general formula (2) (the formula is omitted here), and the Invention is thus understood to solve the above-described problem by the combination of the compound represented by a structural formula (1) and the compound represented by a structural formula (2).

In addition, the specification of the Patent describes in paragraphs [0020] to [0021] "The following compounds are preferable as specific structures of a general formula (2),

[Chemical formula 4]



(in the formula, R¹ denotes one of an alkyl group having one to 15 carbon atoms and an alkenyl group having two to 15 carbon atoms.)", and in paragraph [0022] "it is preferable to further comprise one or two or more kinds of compounds that are selected from a group consisting of compounds represented by a general formula (3) (the formula is omitted here) as a third component in order to adjust the physical property values, and further reduce the viscosity and achieve low voltage of the composition."

Six nematic liquid crystal compositions (No. 1) to (No. 3) and (R1) to (R3) that meet the requirements of the Patent are disclosed in [Table 1] in paragraph [0037] and [Table 2] in paragraph [0040], and the nematic liquid crystal compositions (No. 1) to (No. 3) and (R1) to (R3) are common in terms of only using a compound represented by a general formula (2-1) as a compound represented by a general formula (2), and using in combination a compound represented by a general formula (3). To be specific, while it is specifically confirmed that the above-described problem can be solved when the compound represented by the general formula (2-1) and the compound represented by the general formula (3) are used in combination with the compound represented by the structural formula (1), it cannot be said immediately that the specification of the Patent discloses sufficient evidence as to whether the above-described problem can be solved otherwise.

First, whether the above-described problem can be solved by the compound represented by the general formulae (2) other than the general formula (2-1) will be examined. The demandee alleges, on page 6 in the oral proceedings statement brief, "it is known to those of skill in the art in the liquid crystal field that a tetracyclic compound has a higher TN-I (B No. 2), so that a person skilled in the art coming into contact with the description 'the properties of the liquid crystal compositions according to Examples 1 to 3 showed desired values in... a nematic phase-isotropic liquid phase transition temperature (T_{N-I})' containing 2-Cy-Cy-Ph-Ph1-F, 3-Cy-Cy-Ph-Ph1-F, and 4-Cy-Cy-Ph-Ph1-F ([0038]) can achieve a desired TN-I even when using compounds represented by the general formulae (2) other than 2-Cy-Cy-Ph-Ph1-F, 3-Cy-Cy-Ph-Ph1-F, and 4-Cy-Cy-Ph-Ph1-F, by combining them with 0d1-Cy-Cy-3 to adjust the composition as appropriate in accordance with common general technical knowledge. B No. 2 describes, in the right column of page 312 "benzene rings are bonded at the 1, 4positions, and as the number of circles is increased, the length of cylindrical molecules is increased to enhance the thermal stability of the liquid crystal. The N-I transition temperature of biphenyl liquid crystal is 35 degrees C, while the N-I transition temperature of terphenyl liquid crystal, which has the same terminal group and has one more benzene ring, is 240 degrees C. When one more benzene ring is provided to have three circles from two circles, the N-I transition temperature of terphenyl liquid crystal is increased by 205 degrees C", and in the right column of page 313, "even when the number of cyclohexane rings in the liquid crystal skeleton is increased, the thermal stability of the liquid crystal is significantly enhanced as in the case of benzene rings. The N-I transition temperature of tricyclic biphenyl cyclohexane liquid crystal, which has one more cyclohexane ring than the biphenyl liquid crystal," is "187 degrees C higher than the N-I transition temperature of" the biphenyl liquid crystal." Since it is known to a person skilled in the art of liquid crystal filed that a tetracyclic liquid crystal compound having a lot of cyclohexylene groups or phenylene groups have a higher TN-I, it can be said that there is a technical ground that a person skilled in the art infers that even other tetracyclic compounds; that is, compounds that can as meet the requirements

of the general formula (2), can solve the above-described problem based on the fact that the liquid crystal compositions that are used in the examples and confirmed to solve the problem always only use the compound represented by the general formula (2-1). In addition, the demandee indicated the additional experimental examples 1 to 3 at page 10 in B No. 4 attached to the written statement dated October 19, 2016, and showed that preferable results can be obtained even by using compounds represented by general formulae (2-2) and (2-6).

Against this, the demandant cited the decision on pages 5 to 6 of the written statement dated November 2, 2016, and alleges that "experimental data filed later are not admitted." However, 2005 (Gyo-Ke) 10042, the decision of a lawsuit for canceling the trial decision cited by the demandant shows that "when no specific example is disclosed such that a person skilled in the art can recognize to solve the problem of the invention in the detailed description of the invention, and the description of the detailed description of the invention cannot be said to be expanded or generalized up to the scope of the present invention described in the scope of claims even taking common general technical knowledge of a person skilled in the art at the time of filing of the present application into consideration" experimental data filed later are not admitted. Thus, it is not permitted to make up (a deficit in the originally attached specification) with additional experimental examples when "no specific example is disclosed such that a person skilled in the art can recognize to solve the problem of the invention in the detailed description of the invention" and the matters that do not "disclose the specific example" are common general technical knowledge of a person skilled in the art at the time of filing of the present application." However, the above-described common general technical knowledge was present in the point at issue of the case, and the experimental data were filed as evidence to support the common general technical knowledge, so that the additional experimental examples 1 to 3 filed later should be taken into consideration.

Next, whether or not the compound represented by the general formula (3) is an optional component is examined. While the specification of the Patent describes, in paragraph [0022], that the compound represented by the general formula (3) is an optional component preferably contained "in order to adjust the physical property values, and further reduce the viscosity and achieve low voltage of the composition," the demandee alleges, on page 5 of the oral proceedings statement brief, "it was known to a person skilled in the art at the time of filing of the present application that 'a fluorine-substituted-2-phenylnaphthalene derivative represented by the general formula (I) such as 1-fluoro-2-(3, 4, 5-trifluorophenyl)-6-propylnaphthalene has an effect superior to

conventional compounds in obtaining a liquid crystal composition having a low viscosity, a good response speed, a large refractive index, a wide nematic phase temperature range, and a low threshold voltage' (see Japanese Unexamined Patent Application Publication No. 2000-63305 (B No. 1))," and further indicated, on page 10 of B No. 4 attached to the written statement dated October 19, 2016, the additional experimental example 3 to show that preferable results can be obtained even without using the compound represented by the general formula (3). The demandant alleges that "experimental data filed later are not admitted" as described above; however, since having been filed as evidence to support the matters described in the initial application, the additional experimental example 3 should be taken into consideration.

It is obvious that compounds represented by the general formula (2) can be widely applied as the second component, and the third component is an optional component, taking into consideration the above allegation and the additional experimental data. And thus there is no reason to deny it even if any other allegations of the demandant are taken into consideration.

(1-3) The lower limit of the first component and the number of kinds of the second component

When [Table 1] in paragraph [0037] and [Table 2] in paragraph [0040] in the specification of the Patent are compared, a correlation is found to some extent between the content of 0d1-Cy-Cy-3 represented by the structural formula (1) and the rotation viscosity γ 1 of the Invention (note that, for example, it is understood that the low viscosity of the liquid crystal composition is not determined only by the content of the compound represented by the general formula (1) as, between the liquid crystal compositions (No. 1) and (No. 3), the content of 0d1-Cy-Cy-3 (No. 3) is larger while the rotation viscosity (No. 3) is smaller). According to Table 1 on page 92 in the written demand for trial, it is shown that when the content of 0d1-Cy-Cy-3 is increased from 25% to 54%, the rotation viscosity γ 1 is continuously reduced, and there is no inflection point around at 30%.

However, as the specification of the Patent describes, in paragraph [0004], "a low-viscosity liquid crystal composition can be obtained by increasing the content rate of a bicyclohexane derivative or the like consisting of a cyclohexane ring having a small Δ n value. However, these compounds have strong smectic properties, so that when the content rate of a bicyclohexane derivative is increased, it is difficult to reduce the lower limit temperature of a nematic phase (T-n), and accordingly it is difficult to obtain a liquid crystal composition having a wide nematic phase temperature range," in paragraph [0006], "meanwhile, liquid crystal compositions of which liquid crystal temperature ranges are adjusted using a tetracyclic compound are already known, and specific examples of preferable compounds thereof are disclosed (see Patent Document 5). However, these compositions have a viscosity that is not sufficiently low to respond to a response speed," and in paragraph [0009], "an object of the present invention is to provide a liquid crystal composition for an active matrix liquid crystal display element, the composition having a wide liquid crystal phase temperature range and a low viscosity," the Invention is understood to obtain a liquid crystal composition having a wide liquid crystal phase temperature range and a low viscosity by using a bicyclohexane derivative for which it is known that when the content thereof is increased, the low viscosity can be obtained while it is difficult to widen the nematic phase temperature range, in combination with a tetracyclic compound that is used to adjust the temperature range while not being able to make the viscosity sufficiently low, and is not at least an invention that has an object to find the flexion point of the low viscosity. Because it is confirmed that making the content of the compound represented by the structural formula (1) 30% (while it depends on the other components or the ratio) allows a necessary viscosity to be obtained, making the lower limit of the compound represented by the structural formula (1) 30% is recognized to have a point in relation with the above-described problem.

In addition, while the written demand for trial describes, in Table 2 on page 93, there is no influence on the working-effect (problem solution) even if the number of the kinds of the second components to be contained is varied from one kind, to two kinds, and to three kinds, the matters specifying the Invention are further limited to "two or more kinds of" second components, while it is described that the second component may be "one or two or more kinds" of second components in the initial specification of the Patent, and thus it is obvious that the invention is limited within the scope to solve the above-described problem, which does not lead to violating the requirement stipulated in Article 36(6)(i) and (ii) or the requirement stipulated in Article 36(4)(i) of the Patent Act based on the reason that there is found no direct meaning in relation with the above-described problem (simply, no advantageous effect is recognized in this regard).

(1-4) Examples

The Invention 1 is characterized by excluding a "liquid crystalline medium comprising one or more kinds of compounds having the following formula:

[Chemical formula 4]



(in the formula, R^1 denotes one of an alkyl group and an alkoxy group that is halogenated, or is unsubstituted and has one to 15 carbon atoms, where, in addition thereto, one or more CH₂ groups in these groups are optionally substituted by -C=C-, - C=C-, -O-, -CO-O-, or -O-CO- mutually independently such that oxygen atoms are not directly bonded to one another,

where a ring A denotes a ring structure facing to one of the left and the right in the following formula:





and Z^1 and Z^2 denotes a single bond, $-C=C_-$, $-CF=CF_-$, $-CH=CH_-$, $-CF_2O_-$, or $-CH_2CH_2$ -, where at least one group from Z^1 and Z^2 denotes a group, $-CF=CF_-$, and X denotes one of F, Cl, CN, SF₅ and one of an alkyl group and an alkoxy group that is halogenated, or is unsubstituted and has one to 15 carbon atoms, where, in addition thereto, one or more CH_2 groups in these groups are optionally substituted by $-C=C_-$, $-C=C_-$, $-O_-$, $-CO-O_-$, or $-O-CO_-$ each independently such that oxygen atoms are not directly bonded to one another, and where L^1 , L^2 , L^3 , L^4 , L^5 , and L^6 each independently denotes one of H and F, and m denotes one of zero and one), and having positive dielectric constant anisotropy based on the mixture of the compound". Next, it will be examined about what compound is permitted when the above-described compound simultaneously meets the requirements "at least one group of Z^1 and Z^2 is a group - CF=CF-" and "m denotes zero." When m denotes zero, Z^1 is not present, so that a "group -CF=CF-" would not be present in the compound unless Z^2 is a "group -CF=CF-"

." Thus, it is natural to understand that when m denotes zero, Z^2 is a "group -CF=CF-" in the compound where "at least one group of Z^1 and Z^2 is a group -CF=CF-" is prerequisite. In addition, referring to page 7 in the written correction request, the correction is understood to be "those excluding a liquid crystal composition described in internationally published (International Publication No. WO2006/133783, A No. 6)...", so that it is natural to understand that when m denotes zero, Z^2 is a "group -CF=CF-" even referring to A6.

In view of the above, the above-described compound does not include "3-Ph-T-Ph-1" or "0d3-Ph-T-Ph-3d0" contained in the liquid crystal compositions (No. 1) to (No. 3) and (R1) to (R3) used in the examples in the specification of the Patent, so that even if the liquid crystal compositions containing the above-described compounds are excluded from the liquid crystal composition of the Invention 1, there are still examples of the Invention 1 in the specification, and thus the reason for invalidation supporting absence of examples cannot be admitted.

(2) Provisions of Article 36(6) (ii) of the Patent Act

(2-1) Dielectric constant anisotropy $\Delta \epsilon$

The Invention 3 is to limit the value of dielectric constant anisotropy $\Delta \varepsilon$ to one of the matters specifying the Invention; however, measurement conditions of a dielectric constant anisotropy $\Delta \varepsilon$ are not disclosed in the specification of the Patent.

According to the description on page 26 in the written reply, "it was common general technical knowledge for a person skilled in the art at the time of filing of the present application of the Patent to measure the value of $\Delta \varepsilon$ in accordance with the ordinary method (usually in accordance with Standards of Electronic Industries Association of Japan EIAJ/ED-2521A)," and the description on pages 6 to 7 in the oral proceedings statement brief by the demandee" "(1) a case where a parallel plate panel is used," "(2) a case where a magnetostatic field and a parallel plate panel are used," and "(3) a case where alternating-current impedance measuring equipment is used" are described as specific dielectric constant measuring methods of a liquid crystal material in B No. 3 (Note by the body: JEITA/ED-2521B) obtained by amending Standards of Electronic Industries Association of Japan EIAJ/ED-2521A in March, 2009)...

That is, it can be said "(1) a case where a parallel plate panel is used," "(2) a case where a magnetostatic field and a parallel plate panel are used," and "(3) a case where alternating-current impedance measuring equipment is used" were common general technical knowledge for a person skilled in the art at the time of filing of the Patent.

In these three cases, while the ways to orient the liquid crystals are different

from one another (an orientation panel is used in "(1) a case where a parallel plate panel is used" and "(3) a case where alternating-current impedance measuring equipment is used," and a magnetostatic field is used in "(2) a case where a magnetostatic field and a parallel plate panel are used"), each of the ways is to "measure a capacitance" of the liquid crystals based on the concept that "specific dielectric constants (ϵ) of the liquid crystals with respect to alternating-current electric signals of the liquid crystals become C/Cair values," and thus, if a person skilled in the art who has common general technical knowledge makes a measurement normally, the values of specific dielectric constants (ϵ) are surely coincident with one another.

In addition, even if measurements are made in any of the measurement methods in "(1) a case where a parallel plate panel is used," in "(2) a case where a magnetostatic field and a parallel plate panel are used," and in "(3) a case where an alternating-current impedance measuring equipment is used," the values of $\varepsilon \parallel$ and $\varepsilon \perp$ coincide with one another, and accordingly the values of $\Delta \varepsilon$ surely coincide with one another, so that it is understood that the measurement conditions of dielectric constant anisotropy $\Delta \varepsilon$ was standardized at the time of the filing of the Patent, and the values of $\Delta \varepsilon$ coincide with one another even if measured in any of the measurement conditions while three different measurement conditions are included in the standard.

Consequently although the measurement conditions of dielectric constant anisotropy $\Delta \varepsilon$ in the Invention 3 are not defined, since values of $\Delta \varepsilon$ obtained according to any standardized ordinary methods are identical, the matters specifying the Invention "dielectric constant anisotropy $\Delta \varepsilon$ of 2.5 to 10.0" can be said to be clear.

(3) Summary of Reason for invalidation 3

As described above, the descriptions in the scope of claims after the correction of the case meet the requirement stipulated in Article 36(6)(i) and (ii) of the Patent Act. In addition, the descriptions of the detailed description of the invention of the case meet the requirement stipulated in Article 36(4)(i) of the Patent Act. Thus, the patent for inventions according to Claims 1 to 5 after the correction of the case was not registered in such a way as to constitute a violation of Article 36(4)(i) or (6) of the same act, and accordingly does not fall under Article 123(1)(iv) and should not be invalidated by any of the reasons that the demandant alleges.

No. 7 Closing

In view of the above, the patent for inventions according to Claims 1 to 5 after the correction of the case should not be invalidated. The costs in connection with the trial of the case shall be borne by the demandant under the provisions of Article 61 of the Code of Civil Procedure which is applied mutatis mutandis in the provisions of Article 169(2) of the Patent Act.

Therefore, the trial decision shall be made as described in the conclusion.

January 10, 2017

Chief administrative judge: FUJI, Yoshihiro Administrative judge: IWATA, Yukitaka Administrative judge: HASHIMOTO, Shigekazu