

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BOE Technology Group Co., Ltd.,
Petitioner,

v.

Paneltouch Technologies LLC,
Patent Owner.

U.S. Patent No. 9,250,758
Original Issue Date: February 2, 2016
Title: DISPLAY DEVICE WITH TOUCH PANEL

Case No. IPR2025-01245

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 9,250,758
UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. § 42 *et seq.***

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LISTING OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 9,250,758 (the “’758 patent”)
1002	Prosecution History of U.S. Patent No. 9,250,758
1003	Declaration of Dr. Vivek Subramanian
1004	U.S. Patent Publication No. 2008/0303798 A1 (“Nakamura”)
1005	U.S. Patent Publication No. 2008/0246741 A1 (“Hinata ’741”)
1006	Prosecution History of U.S. Patent No. 9,639,229 (excerpted)
1007	JP-A-2002-342014 to Takaya (“Takaya”)
1008	Prosecution History of U.S. Patent No. 8,803,836 (excerpted)
1009	U.S. Patent Publication No. 2009/0096763 A1 (“Hinata ’763”)

CHALLENGED CLAIM LISTING

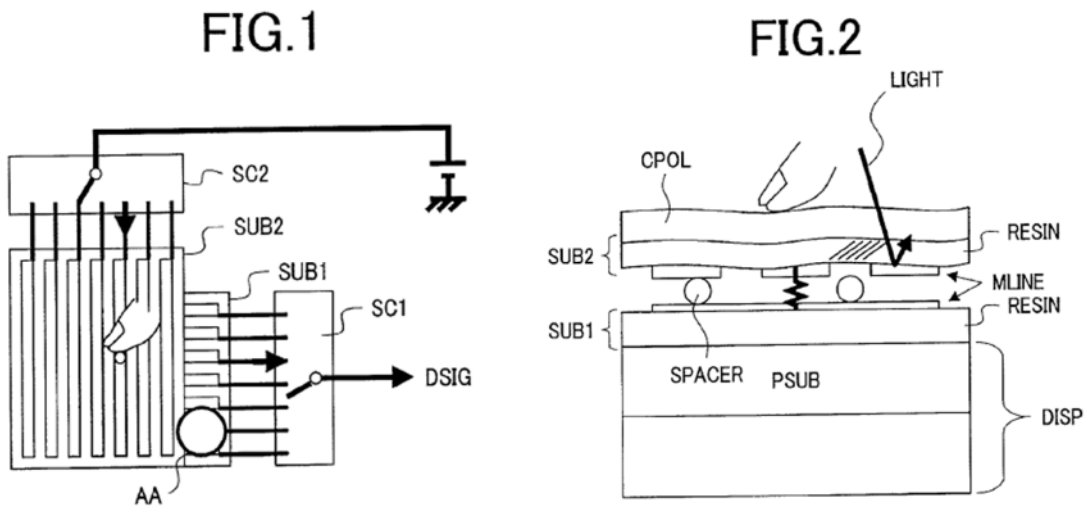
Claim	Limitation No.	Limitation
1	[1-PRE]	A display device with a touch panel comprising:
	[1-A]	the touch panel including a first substrate having a detection area to detect a coordinate and an outside area in which at least one external terminal is formed, a plurality of first lines to detect the coordinate in the detection area, a plurality of second lines to detect the coordinate in the detection area, each of the plurality of first lines traversing each of the plurality of second lines;
	[1-B]	an organic emitting display panel under the touch panel; and
	[1-C]	a circular polarizing plate arranged at a side of the touch panel opposite to the organic emitting display panel; wherein the organic emitting display panel, the touch panel, and the circular polarizing plate are arranged in this order.
2	2	A display device with a touch panel according to claim 1, wherein each of the plurality of second lines and the plurality of first lines is made of metal; and wherein each of the plurality of first lines is black in color.
3	3	A display device with a touch panel according to claim 2, wherein the touch panel includes a plurality of wiring groups; wherein each of plurality of wiring groups has some of the first lines; and wherein some of the first lines in each of plurality of wiring groups are bonded with each other.
4	4	A display device with a touch panel according to claim 3, wherein a transparent conductive film overlays the plurality of the first lines, and wherein the transparent conductive film is electrically connected to the plurality of the first lines.

Claim	Limitation No.	Limitation
5	5	A display device with a touch panel according to claim 3, wherein a transparent conductive film underlays the plurality of the first lines, and wherein the transparent conductive film is electrically connected to the plurality of the first lines.
6	6	A display device with a touch panel according to claim 2, wherein a transparent conductive film overlays the plurality of the second lines; and wherein the transparent conductive film is electrically connected to the plurality of the second lines.
7	7	A display device with a touch panel according to claim 2, wherein a transparent conductive film underlays the plurality of the second lines, and wherein the transparent conductive film is electrically connected to the plurality of the second lines.
8	8	A display device with a touch panel according to claim 1, wherein the touch panel is a resistance-film-type touch panel.
9	9	<p>A display device with a touch panel according to claim 1, further including:</p> <ul style="list-style-type: none"> a first adhesive layer between the touch panel and the organic emitting display panel; and a second adhesive layer between the touch panel and the circular polarizing plate; <p>wherein the touch panel and the organic emitting display panel are fixed with each other by the first adhesive layer, and the touch panel and the circular polarizing plate are fixed with each other by the second adhesive layer.</p>

I. INTRODUCTION

Pursuant to 35 U.S.C. §§ 311-319 and 37 C.F.R. § 42, Petitioner respectfully requests *inter partes* review (“IPR”) of Claims 1-9 (“Challenged Claims”) of U.S. Patent No. 9,250,758 (the “’758 patent”).

The Challenged Claims are unpatentable because they claim touch panel structures that previously were previously described in Nakamura. The ’758 patent expressly admits that the “applicants of the present application” had already “proposed a touch panel which adopts [a] new detection structure” that addressed these alleged drawbacks in Nakamura. Ex. 1001, 2:57-59; *see also id.*, 4:53-60 (stating the “detail of the touch panel” is described in Nakamura), 6:39-48 (“adopt[ing]” Nakamura’s touch panel). Indeed, Figs. 1-2 of Nakamura are disclosed in Figs. 9-10 of the ’758 patent. Ex. 1004, Figs. 1-2:



To try and distinguish Nakamura, the ’758 patent alleges that, when using it,

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“the user feels the surface unevenness,” preventing an “excellent touch feeling.”

Ex. 1001, 2:57-3:3. To address this alleged issue, the '758 patent proposes the addition of “a resin film which is adhered to the first substrate on a side opposite to the second substrate,” as embodied by resin film 26 shown in Fig. 2. *Id.*, 3:14-19, 5:3-4, 5:25-29, Fig. 2.

The '758 patent claims do not claim this feature. Rather, they relate to other aspects of touch panels the '758 patent admits Nakamura teaches, like substrate detection areas, display panels, and polarizing plates.

Petitioner requests that the PTAB institute trial and find the Challenged Claims unpatentable for the reasons set forth herein.

II. 37 C.F.R. § 42.8(B): MANDATORY NOTICES

A. 37 C.F.R. § 42.8(b)(1): Notice of Real Parties-in-Interest

BOE Technology Group Co., Ltd. (“BOE” or “Petitioner”) is the real party-in-interest. No other parties exercised or could have exercised control over this Petition; no other parties funded or directed this Petition. *See* Office Patent Trial Practice Guide, 77 Fed. Reg. 48756, 48759-60 (Aug. 14, 2012).

B. 37 C.F.R. § 42.8(b)(2): Notice of Related Matters

To the best knowledge of Petitioner, the '758 patent has been involved in the following matters:

Case Name	Filed
<i>Paneltouch Technologies LLC v. BOE Technology Group Co., Ltd.</i> , No. 2:25-cv-00245-JRG (E.D. Tex.)	February 28, 2025

C. 37 C.F.R. § 42.8(b)(3) and (4): Notice of Counsel and Service Information

Petitioner's Lead Counsel	Petitioner's Back-Up Counsel
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Petitioner submits a Power of Attorney with this Petition. Please address all correspondence to lead counsel. Petitioner consents to service by email at the email addresses listed above.

D. Fee for Inter Partes Review

The USPTO is authorized to charge the filing fee and any other fees incurred by Petitioner to the deposit account of Orrick, Herrington, & Sutcliffe LLP: 15-0665.

III. REQUIREMENTS FOR IPR

This Petition complies with all requirements under 37 C.F.R. § 42.104 for IPR.

A. § 42.104(a): Grounds for Standing

The '758 patent is available for IPR. Petitioner is not barred or estopped from requesting IPR. This Petition is timely filed under 35 U.S.C. § 315(b).

B. § 42.104(b): Identification of Challenge

Under 37 C.F.R. §§ 42.104(b) and 42.22, Petitioner requests that the Board institute IPR on the Challenged Claims of the '758 patent and cancel those claims as unpatentable.

1. § 42.104(b)(1): Challenged Claims

Petitioner challenges Claims 1-9 of the '758 patent.

2. § 42.104(b)(2): The Prior Art and Statutory Grounds

The application for the '758 patent claims priority to U.S. application 12/649,414, filed on December 30, 2009, and foreign application JP 2009-004874, filed on January 13, 2009.

The references relied upon herein are prior art to the '758 patent as follows:

Patent/Publication	Prior Art Date	Prior Art	Ex.
U.S. Patent Publication No. 2008/0303798 A1 ("Nakamura")	December 11, 2008 (publication) June 6, 2008 (latest possible priority)	102(b), (a), (e)	1004

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Patent/Publication	Prior Art Date	Prior Art	Ex.
U.S. Patent Publication No. 2008/0246741 A1 ("Hinata '741")	October 9, 2008 (publication) March 7, 2008 (latest possible priority)	102(b), (a), (e)	1005

The '758 patent is a pre-AIA patent. Nakamura and Hinata '741 are pre-AIA 102(b) art to the '758 patent because they were published more than one year before the earliest U.S. application the '758 patent claims priority to. The '758 patent's priority claim to foreign application JP 2009-004874 is not relevant to this inquiry and cannot be relied on to overcome 102(b) prior art. To be 102(b) prior art, a reference must have been published "more than one year prior to *the date of the application for patent in the United States,*" which is the case here. Pre-AIA 35 U.S.C. § 102(b); Pre-AIA 35 U.S.C. § 119(a); *see also, e.g.,* Chisum on Patents § 14.05[4] (2004) (under pre-AIA § 119, foreign filings were "not equivalent to a domestic filing, which would preclude a statutory bar"); *Powdermagic, Ltd. v. Rossignol Ski Co.*, No. 1:04CV00133, 2005 WL 3981617, at *5 (D. Utah Aug. 4, 2005) (as there is no authority to support Patent Owner's assertion "that the operative date in this case is September 1989—the filing date of Mr. Sutherland's Canadian patent application," prior art reference published after that date may serve as a statutory bar).

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Notably, patent owner did not dispute Nakamura’s prior art status when the examiner applied it during the prosecution of a child patent of the ’758 patent, U.S. Patent No. 9,639,229 (“the ’229 patent”).¹ Ex. 1006 (’229 File History), 8/2/2016 Office Action, 11/1/2016 Response.

Below are the specific statutory grounds on which the claims are challenged:

Ground Number	Ground
1	Claims 1-8 are obvious under 35 U.S.C. § 103 (pre-AIA) (“obvious”) over Nakamura
2	Claim 9 is obvious under over Nakamura, as well as Nakamura in combination with Hinata ’741

As discussed in detail below, the original Japanese application to which Nakamura claims priority (JP 2007-149884) is discussed in the ’758 patent specification, without incorporating it by reference. Despite this, the patent owner did not disclose Nakamura or its Japanese priority application to the examiner during prosecution in an IDS. *See* Ex. 1002.

Hinata ’741 also was not before the Examiner during prosecution of the ’758 patent. *Id.*

¹ During the ’229 patent’s prosecution, the examiner referred to Nakamura as Matsudate. Because Mr. Matsudate is also a named inventor of the ’836 patent, while Mr. Nakamura is not, this Petition refers to Ex. 1004 as Nakamura to avoid the potential for confusion.

3. Level of Ordinary Skill in the Art

A POSITA in the technology described in the '758 patent in 2009 would have had at least a Bachelor's degree in electrical engineering or a similar discipline, along with 2-3 years of experience with display and touch panel technologies. Ex. 1003, ¶27. Relevant experience can substitute for education and vice versa. *Id.*

4. § 42.104(b)(5): Evidence Supporting Challenge

The Declaration of Dr. Vivek Subramanian (Ex. 1003) and other supporting evidence in the Exhibit List are filed herewith. Dr. Subramanian's background and qualifications, and the information provided to him, are discussed in Exhibit 1003.

IV. INSTITUTION SHOULD BE GRANTED

This Petition establishes a reasonable likelihood of success on the merits and all other requirements for an IPR.

V. TECHNOLOGY BACKGROUND

By September 2009, display devices having touch panels were well established and built upon the decades-old understanding of basic detection principles. Ex. 1003, ¶31. The concept of using wired detection areas in one or more substrates to detect the coordinates where a user touches a touch screen was already well in place, as were the display device and touch screen structures used to implement it. *Id.*

For example, as discussed in the following section, the '758 patent admits that detection methods ranging from light-based and electric characteristic-based concepts, including both resistive and capacitive sensing methods, were all well known. Ex. 1003, ¶32; Ex. 1001, 1:22-52, Figs. 20-21. And the '758 patent repeatedly admits that the exact touch panel structure it claims had already been disclosed in Nakamura. Ex. 1003, ¶32; Ex. 1001, 2:57-59, 4:57-60, 6:40-52.

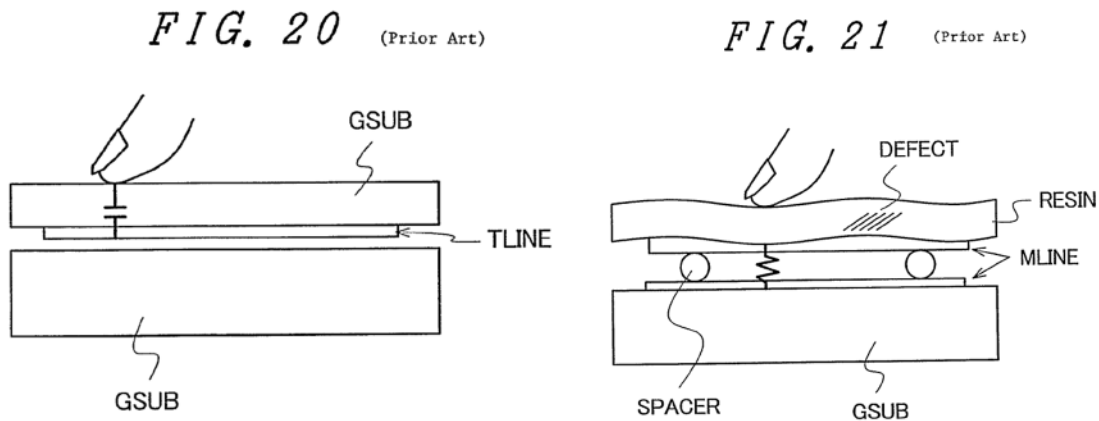
Thus, by 2009, the '758 patent was part of a crowded art where the concepts employed in the field were well understood, predictable, and routinely mixed and matched as needed to achieve a POSITA's design goals. Ex. 1003, ¶33. The '758 patent itself admits that the particularities of such detection techniques—such as the exact structure its claimed display device and its touch panel—were all known and available for designers to choose from, as discussed throughout this Petition.

Id.

VI. THERE EXISTS A REASONABLE LIKELIHOOD THAT THE CHALLENGED CLAIMS ARE UNPATENTABLE

By 2009, display devices having touch panels were part of a crowded art that routinely utilized and adapted well understood and predictable detection methods in various structures. Ex. 1003, ¶35. The '758 patent admits that a wide variety of detection methods had already been “adopted by a conventional display device with a touch panel,” including light-based and electric characteristic-based

detection methods. Ex. 1003, ¶35; Ex. 1001, 1:22-31. Well-known prior art electric characteristic-based detection methods included both resistive detection, which works by detecting pressure applied to a touch panel, and capacitive sensing detection, which works by creating an electric field above the surface of the touch panel and detecting changes in the electric field caused by objects like a finger. Ex. 1003, ¶35; Ex. 1001, 1:29-31. The '758 patent depicts example prior art capacitive and resistive sensing touch panels in Figs. 20 and 21, respectively. Ex. 1003, ¶35; Ex. 1001, 1:32-52, Figs. 20-21:



The rest of the '758 patent focuses entirely on resistive sensing touch panels.

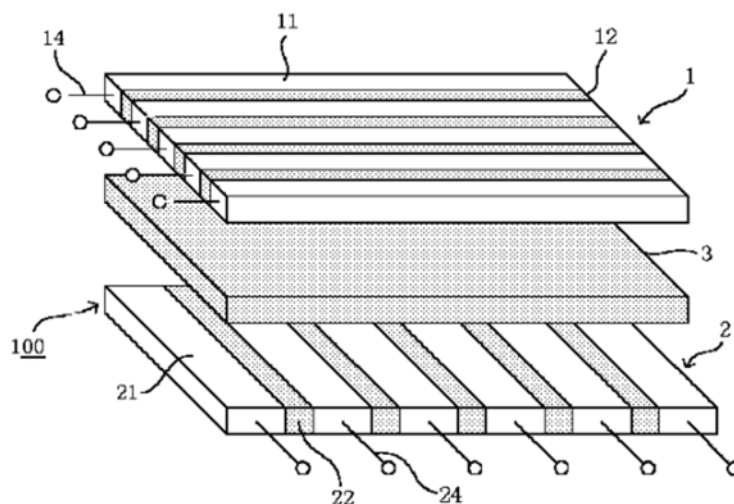
Ex. 1003, ¶36.

A. Problem Addressed by the '758 Patent and the Alleged Invention

The '758 patent acknowledges that touch panels, including resistive sensing touch panels, were already well-known. Ex. 1003, ¶37. However, it criticizes JP-A-2002-342014 to Takaya (“Takaya”), which teaches a resistive sensing touch

panel “in which a transparent electrode is formed into stripe-shaped electrodes and these stripe-shaped transparent electrodes are made [to] intersect with each other thus arranging intersecting portions in a matrix array.” *Id.*; Ex. 1001, 1:53-59. The ’758 patent does not provide pinpoint cites to Takaya that would clarify its criticism but appears to refer to the way electrodes 14 and electrodes 24 intersect with each other as shown in, *e.g.*, Fig. 1. Ex. 1007 (Takaya), Fig. 1:

【図1】



The ’758 patent criticizes this “stripe-shaped” approach for its alleged inability to increase detection accuracy due to the tradeoff between the need to decrease electrode line width and the corresponding increase in resistance this causes. Ex. 1003, ¶38; Ex. 1001, 1:63-2:2. The ’758 patent identifies other alleged drawbacks to Takaya’s approach, including that it is “difficult to decrease a gap between the transparent electrodes,” and that, because the contact positions

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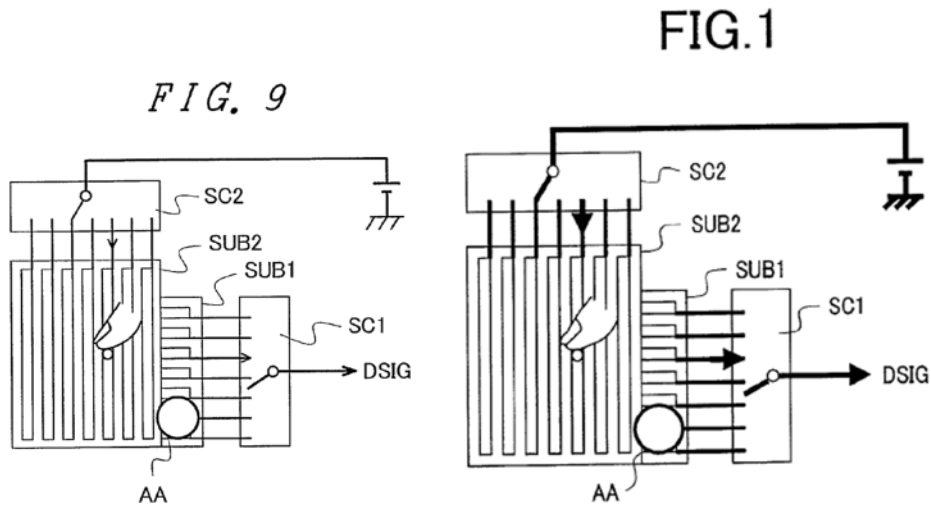
“are detected one-dimensionally,” detection is “performed twice along an X axis and a Y axis.” Ex. 1003, ¶38; Ex. 1001, 2:2-56.

Despite highlighting these issues, the '758 patent does not present a new solution to these problems. Instead, it states that the “applicants of the present application” had already “proposed a touch panel which adopts [a] new detection structure (Japanese Patent Application 2007-149884)” that addresses the drawbacks in Takaya. Ex. 1003, ¶39; Ex. 1001, 2:57-59. The '758 patent expressly adopts the same structure presented in this application. *Id.*

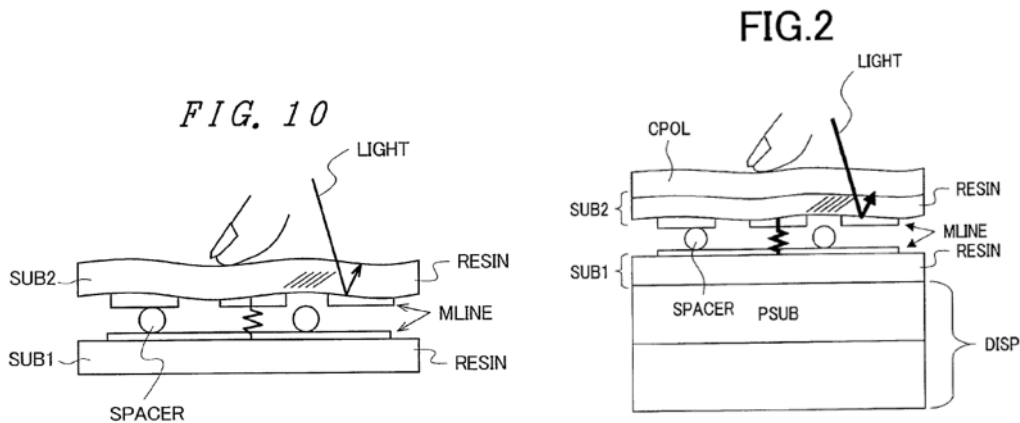
Notably, this Japanese application is the foreign priority application for the Nakamura prior art relied on in this Petition. Ex. 1003, ¶40; Ex. 1004, [0001] (“The present application claims priority from Japanese application JP2007-149884 filed on Jun. 6, 2007, the content of which is hereby incorporated by reference into this application”), (30) (priority claim to same application).

The '758 patent reiterates several times that the detail of its disclosed touch panel 10 is the same as that described in Japanese Patent Application 2007-149884, *i.e.*, Nakamura. Ex. 1003, ¶41; Ex. 1001, 4:57-59. Indeed, the preferred embodiment of the '758 patent's touch panel is shown in its Fig. 9, which is expressly stated to be copied from Nakamura: “FIG. 9 is a schematic plan view of the touch panel of this mode which adopts the touch panel described in” Nakamura. Ex. 1003, ¶41; Ex. 1001 ('758 patent), 6:45-52, Fig. 9 (below left);

Ex. 1004 (Nakamura), Fig. 1 (same figure, below right):



As shown below, Nakamura had also already disclosed essentially the same cross-sectional view of the '758 patent Fig. 10 embodiment. Ex. 1003, ¶42; Ex. 1001 ('758 patent), Fig. 10 (below left); Ex. 1004 (Nakamura), Fig. 1 (same figure with additional detail, below right):



The '758 patent thus admits that Nakamura had already disclosed the same “new detection structure” the '758 patent presents to solve the alleged problems

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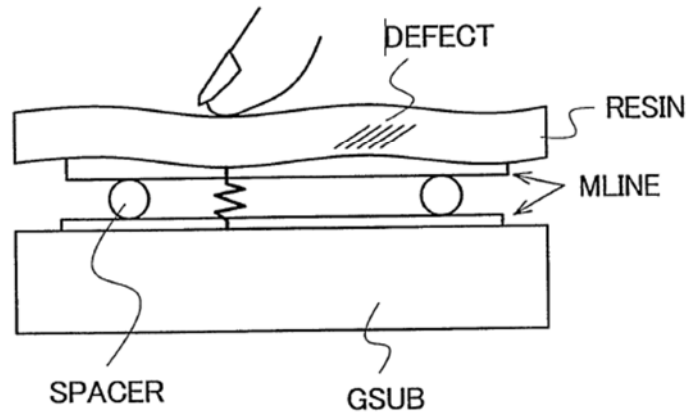
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presented by Takaya. Ex. 1003, ¶43.

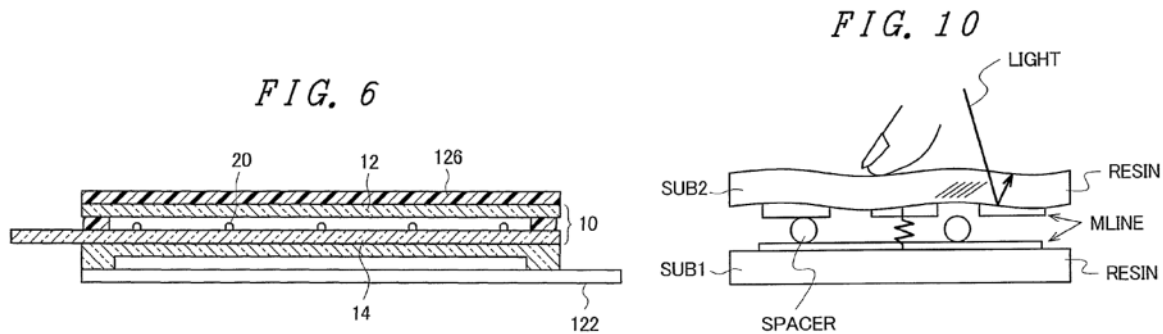
The '758 patent states, without reference to any particular prior art, that “according to such a related art, since a plurality of lines are formed on a touch panel and hence, when a user moves a pen on an operation surface in a sliding manner, the user feels the surface unevenness.” Ex. 1003, ¶44; Ex. 1001, 2:57-3:3. This is said to prevent the user from experiencing an “excellent touch feeling.” *Id.* The '758 patent states that this “excellent touch feeling” is achieved by adding “a resin film which is adhered to the first substrate on a side opposite to the second substrate.” Ex. 1003, ¶44; Ex. 1001, 3:14-16. Because “[a]ccording to the present invention, the resin film is adhered to the touch panel, the uneven[n]ess attributed to the first electrode is absorbed and hence, the touch panel can give a user excellent touch feeling.” Ex. 1003, ¶44; Ex. 1001, 3:16-19.

The '758 patent appears to be suggesting that in prior art systems, such as what is shown in Fig. 21, the user would touch only a resin film, and so could feel its defects. Ex. 1003, ¶45; Ex. 1001, Fig. 21:

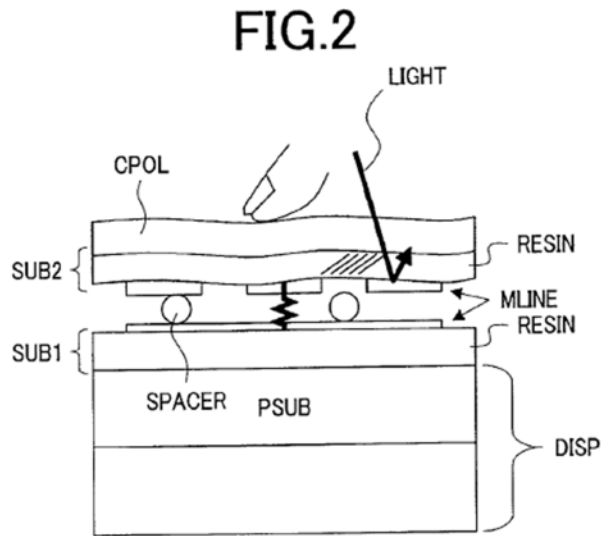
FIG. 21 (Prior Art)



The '758 patent claims to have instead devised a touch panel that combines a resin film and a substrate, as shown in, for example, Figs. 6 and 10. Ex. 1003, ¶46; Ex. 1001, Figs. 6, 10:



But this too fails to distinguish the '758 patent from Nakamura, which had already admittedly disclosed this same arrangement in its Fig. 2. Ex. 1003, ¶47; Ex. 1004, Fig. 2:



While the '758 patent removed Nakamura's circular polarizing plate CPOL from its Fig. 10 embodiment for unexplained reasons, the same circular polarizing plate is shown as 126 in its Fig. 6, in exactly the same arrangement as Nakamura's Fig. 2. Ex. 1003, ¶48; Ex. 1001, 5:52-63. Compare Ex. 1004 (Nakamura), Fig. 2 (circular polarizing plate CPOL arranged over touch panel comprising substrates SUB1 and SUB2, itself arranged over display panel DISP), with Ex. 1001 ('758 patent), Fig. 6 (circular polarizing plate 126 arranged over touch panel 10 comprising substrates 12 and 14, itself arranged over display panel 122).

Thus, whatever advancement in "touch feeling" the '758 patent is referring to, it had already been taught by Nakamura. Ex. 1003, ¶49.

Indeed, while the '758 patent attributes its "excellent touch feeling" to "a resin film which is adhered to the first substrate on a side opposite to the second

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substrate,” Nakamura had already disclosed such a resin film in its Fig. 2.

Ex. 1003, ¶50; Ex. 1001, 3:14-16. Not only this, the '758 patent admits that resin films were well-known in both “conventional resistance-film-type panel[s]” and Nakamura. Ex. 1003, ¶50; Ex. 1001, 1:40-52, 6:45-52, Figs. 9, 21.

Moreover, despite the '758 patent specification's statement that this resin film is the only alleged advancement over an unidentified “related art,” none of the '758 patent claims recite it. Ex. 1003, ¶51. Indeed, no claim recites the word “resin” at all. *Id.* While dependent claims 4-7 recite “a transparent conductive film” that overlays or underlays certain detection lines, they do not relate to the allegedly novel resin film, but rather the “transparent electrode TLINE” that was admittedly well disclosed by both “conventional” touch panels and Nakamura. Ex. 1003, ¶51; Ex. 1001, 1:30-57, 8:51-9:15, 9:47-10:17, Figs. 12-13, 16-19, 20-21; *see also* Ex. 1004, [0007]-[0008], [0081]-[0089], [0098]-[0110], Figs. 4-5, 8-11, 13-14 (same disclosures in Nakamura). And the reference to a “resistance-film-type touch panel” in dependent claim 8 is simply a statement that the touch panel is a resistive sensing one, which is again an admittedly “conventional” concept also taught by Nakamura. Ex. 1003, ¶51; Ex. 1001, 1:29-59, Figs. 20-21; *see also* Ex. 1004, [0006]-[0008], [0068], [0080], Figs. 13-14.

As the '758 patent expressly admits, and as shown throughout this Petition, the concepts it claims, such as substrate detection areas, display panels, and

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polarizing plates, were already disclosed by the touch panel structure of Nakamura. Ex. 1003, ¶52.

In sum, the '758 patent itself admits that Nakamura had already taught the claimed touch panel structure. Ex. 1003, ¶53. The claims are thus admittedly disclosed by Nakamura. *Id.*

B. Prosecution History

The '758 patent stems from foreign application JP 2009-004874 and U.S. application 12/649,414 and was prosecuted in the United States as Application No. 13/966,857.

As discussed above, despite the fact that Nakamura admittedly discloses the touch panel structure claimed in the '758 patent, the patent owner did not disclose Nakamura to the examiner in an IDS during prosecution. *See generally* Ex. 1002.

The only substantive activity during the prosecution involved an obviousness-type double patenting rejection over the '758 patent's parent patent, U.S. Patent No. 8,803,836 ("the '836 patent"). Ex. 1002, 5/6/2015 Office Action. In response, the patent owner filed a terminal disclaimer, and the claims were then allowed. *Id.*, 8/4/2015 Response and Terminal Disclaimer; 9/28/2015 Notice of Allowance.

C. Claim Construction

The Board construes claims under *Phillips v. AWH Corp.*, 415 F.3d 1303

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(Fed. Cir. 2005) (*en banc*) and its progeny. Under *Phillips*, claims are given their plain and ordinary meaning in light of the specification. 415 F.3d at 1315-17. The Board only construes claim terms when necessary to resolve the controversy. *See, e.g., Toyota Motor Corp. v. Cellport Sys., Inc.*, IPR2015-00633, Paper 11 at 16 (PTAB Aug. 14, 2015).

While Petitioner does not believe any claim construction is necessary here, to avoid any confusion, it should be understood that Claim 1 does *not* require a touch panel with first and second detection lines on “one and only one substrate.” Ex. 1003, ¶¶57-58. Claim 1 does not state that both sets of detection lines are adhered to the first substrate. *Id.* Thus, as a comprising claim, Claim 1 covers touch panels with additional substrates beyond the claimed first substrate. *Id.*

This understanding was repeatedly confirmed throughout the ’758 patent family’s prosecution history. Ex. 1003, ¶59. For example, during prosecution of the parent ’836 patent (during which Nakamura also was *not* disclosed by the patent owner in an IDS), the examiner first rejected the pending claims over prior art including U.S. Patent Publication No. 2009/0096763 A1 (“Hinata ’763”). Ex. 1008 (’836 Patent File History), 12/12/2013 Office Action, pp. 3-8.

In response, patent owner newly added independent Claim 8, which is similar to ’758 patent Claim 1, arguing that Hinata ’763 did not disclose “an organic luminescence electric device panel, wherein the organic luminescence

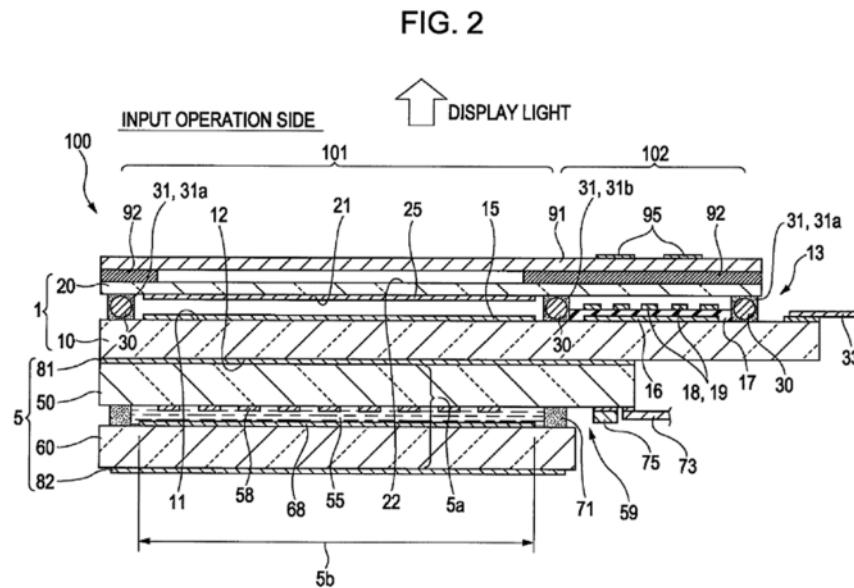
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electric device panel is adhered to the touch panel, and a circular polarizing plate is adhered to the touch panel at a side opposite to the organic luminescence organic electric device panel.” Ex. 1003, ¶60; Ex. 1008, 3/11/2014 Amendment, pp. 3-4, 8-9.

Following these amendments, the examiner allowed the claims over Hinata '763. Ex. 1008, 4/16/2014 Notice of Allowance; Ex. 1003, ¶61.

The examiner thus maintained that Hinata '763 disclosed an '836 patent claim element that—like '758 patent Claim 1 Element [1-A]—recites only a single “first substrate,” but two separate sets of detection lines (“first lines” and “second lines”). Ex. 1003, ¶62; Ex. 1008, 4/16/2014 Notice of Allowance, pp. 3-4. This was the case despite the fact that, like the '836 patent's (and the '758 patent's) specification embodiments, Hinata '763's touch panel discloses two separate substrates, each with its own set of detection lines. Ex. 1003, ¶62; Ex. 1009 (Hinata '763), Fig. 2 (depicting first electrode 15 formed on first substrate 10 opposite second electrode 25 formed on second substrate 20):



See also, e.g., Ex. 1001, 6:45-7:14, Figs. 9-10 (two-substrate structure in '758 patent).

The '836 patent file history thus demonstrates that the patent owner and examiner both understood that the plain and ordinary meaning of its Claim 1 covers embodiments that contain two substrates, with the claimed “plurality of first lines” on a first substrate and the claimed “plurality of second lines” on a second substrate. Ex. 1003, ¶63. This applies equally to '758 patent Claim 1 Element [1-A]. *Id.*

This understanding was further confirmed during the prosecution the '758 patent's child '229 patent, where the examiner applied Hinata '763 against a version of pending Claim 1 that recited two substrates. Ex. 1003, ¶64; Ex. 1006 ('229 Patent File History), 3/14/2016 Office Action, pp. 4-8. After the patent

owner amended Claim 1 to, like '758 patent Claim 1, recite only a single substrate (Ex. 1006, 6/14/2016 Amendment, pp. 2), the examiner again applied Hinata '763's two-substrate embodiment. Ex. 1006, 8/2/2016 Office Action, pp. 3-7.

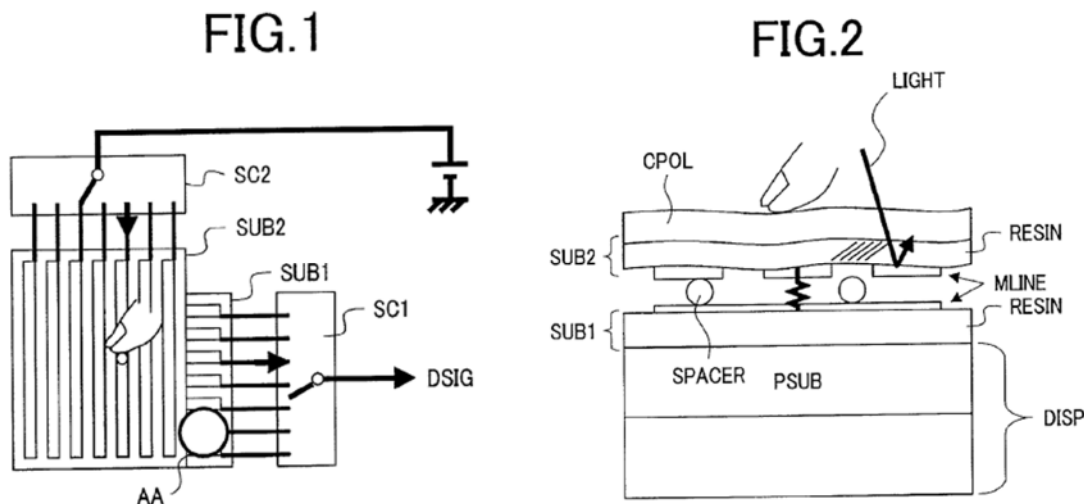
This understanding that '758 patent Claim 1 is satisfied by two-substrate embodiments, as reflected across the '758 patent family's prosecution history, is an important one. Ex. 1003, ¶65. Every embodiment in the '758 patent specification is, like Hinata '763, a two-substrate embodiment. Ex. 1003, ¶65; Ex. 1001, 6:45-7:14, Figs. 9-10 (two-substrate structure in '758 patent).

VII. THE PRIOR ART

A. Nakamura

Nakamura is directed to display devices with touch panels having particular structures. Ex. 1003, ¶67; Ex. 1004, Abstract. As discussed above, the '758 patent repeatedly admits that the exact touch panel structure it claims had already been disclosed in Nakamura. Ex. 1003, ¶67; Ex. 1001, 2:57-59, 4:57-60, 6:45-52.

The preferred embodiment of Nakamura's touch panel is shown in schematic diagram and cross-sectional diagram views in Figs. 1 and 2, respectively. Ex. 1003, ¶68; Ex. 1004, Figs. 1-2:



See also Ex. 1001, Figs. 9-10 (substantially similar disclosure in '758 patent, with less detail in Fig. 10).

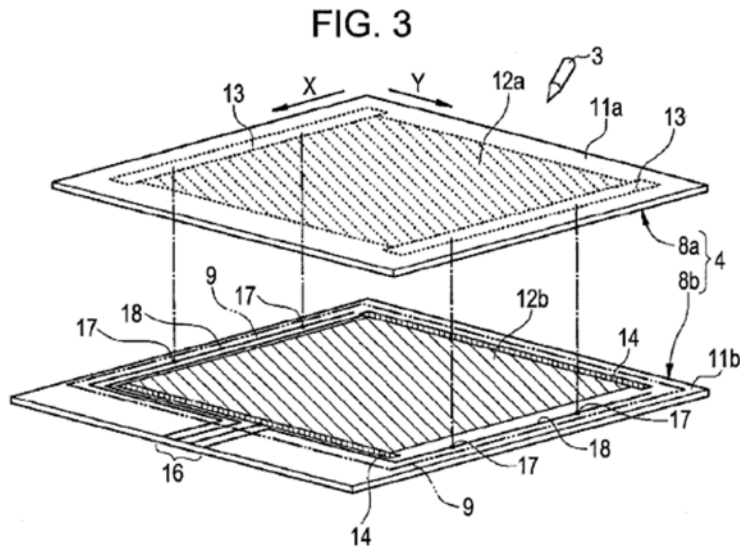
As shown, Nakamura's touch panels comprise two oppositely facing substrates, each arranged "so that their respective metal wirings face each other and that directions along which the respective metal wirings extend are made to intersect," a display panel, and a circularly polarizing plate CPOL. Ex. 1003, ¶69; Ex. 1004, [0050]-[0055], Figs. 1-2; see also Ex. 1001, 6:45-7:14, Figs. 9-10 (substantially similar disclosure in '758 patent).

Additional details regarding Nakamura's touch panels, each again substantially similar to those of the '758 patent, are discussed in the claim analysis below. Ex. 1003, ¶70.

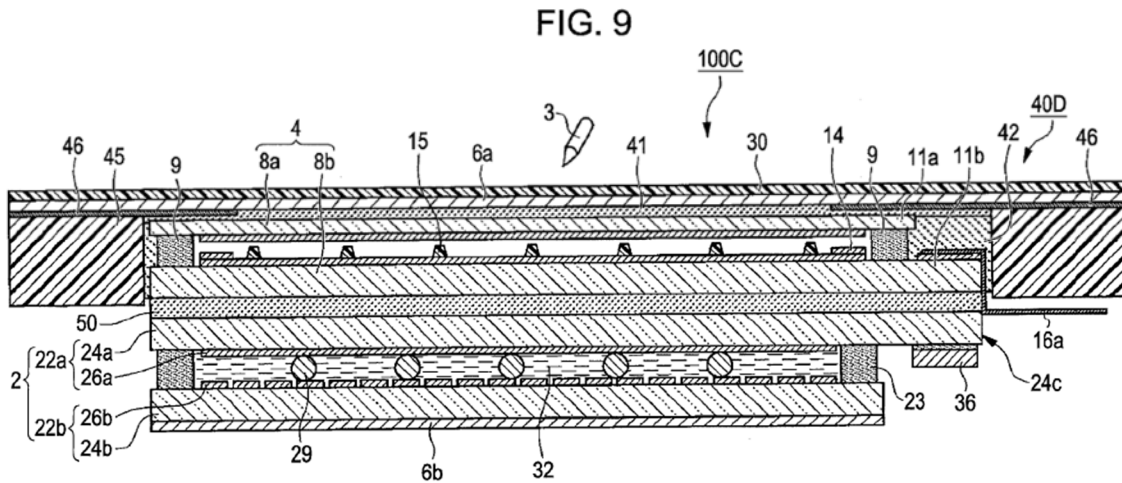
B. Hinata '741

Hinata '741 relates to input devices having displays and touch panels.

Ex. 1003, ¶72; Ex. 1005, [0002]-[0006]. For example, Fig. 3 shows an exploded perspective view of one such touch panel. Ex. 1003, ¶72; Ex. 1005, [0061], [0086], Fig. 3:



Hinata '741 discloses a number of embodiments in terms of the structure its touch panel can comprise, as well as many different ways that its various components can be adhered together. Ex. 1003, ¶73; Ex. 1005, [0008]-[0009], [0019]-[0022], [0030], [0048]-[0052], [0083], [0095]. One embodiment is shown in Fig. 9. Ex. 1003, ¶73; Ex. 1005, Fig. 9:



As shown, Hinata '741's Fig. 9 device comprises, *inter alia*, physically separate adhesive layer 41 between polarizing plate 6a and touch panel 4, as well as a second physically separate adhesive layer 50 between display panel 2 and touch panel 4. Ex. 1003, ¶74; Ex. 1005, [0170]-[0178], Fig. 9.

While display panel 2 is described as an LCD panel in these paragraphs, Hinata '741 notes elsewhere than an organic EL panel can be used rather than an LCD panel in any of its embodiments. Ex. 1003, ¶75; Ex. 1005, [0029], [0056].

C. Motivation to Combine Nakamura and Hinata '741

A POSITA would have found it obvious to combine Nakamura and Hinata '741 for many reasons. Ex. 1003, ¶¶76-79.

Nakamura and Hinata '741 are in the same field, display device touch panels, and both disclose adhering a polarizing plate to one side of a touch panel as well as adhering an OLED display panel to the other side of the touch panel.

Ex. 1003, ¶77; Ex. 1004 (Nakamura), [0055], Fig. 2; Ex. 1005 (Hinata '741),

[0029], [0056], [0083], [0095], [0099], [0101], [0115]-[0116], [0147]-[0148], [0165]-[0168], [0170]-[0178], Fig. 9.

The references are implemented in standard display panels using standard electrical principles. Ex. 1003, ¶78; Ex. 1004 (Nakamura), Abstract, [0002]-[0009], Figs. 13-14; Ex. 1005 (Hinata '741), [0005]-[0006], [0029], [0056]. Both can be integrated into a variety of different devices, including cellular phones and televisions, and can comprise many different display types, including LCDs and OLEDs. Ex. 1003, ¶78; Ex. 1004 (Nakamura), [0055], [0078], Fig. 12; Ex. 1005 (Hinata '741), [0029], [0056], [0279]. And both disclose panels that touch detect using opposing surfaces, each having detection electrodes arranged along an x-y coordinate axis. Ex. 1003, ¶78; Ex. 1004 (Nakamura), [0003], [0051]-[0054], [0079], [0093], Figs. 1-2, 6; Ex. 1005 (Hinata '741), [0085]-[0087], [0104]-[0107], [0171], Figs. 3, 9. Thus, a POSITA could have predictably and successfully combined them without undue experimentation. Ex. 1003, ¶78.

Additional details regarding why a POSITA would have been motivated to combine Nakamura and Hinata '741 to arrive at the relevant claim are discussed in Section VIII.B.1 below. Ex. 1003, ¶79. For example, a POSITA would have been inspired to fix Nakamura's touch panel and organic emitting display panel with each other, and to fix Nakamura's touch panel and circular polarizing plate with each other, using physically separate adhesion layers in order to facilitate good

adhesion between the layers over the large areas associated with typical displays and touch panels, using processes that were easy to implement and commonly used in the manufacture of the same. *Id.*

VIII. THE CHALLENGED '758 PATENT CLAIMS ARE UNPATENTABLE OVER THE PRIOR ART

A. GROUND 1: Claims 1-8 Are Obvious Over Nakamura

1. Independent Claim 1

Nakamura renders Claim 1 obvious. Ex. 1003, ¶¶82-106.

a) [1-PRE]

To the extent the preamble is found to be limiting, Nakamura discloses and renders obvious “[a] display device with a touch panel.” Ex. 1003, ¶¶83-84.

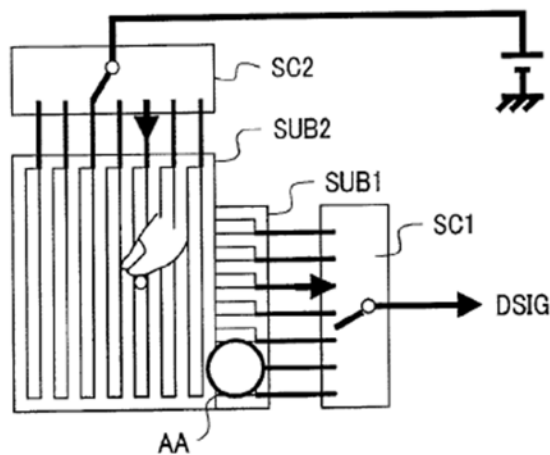
Nakamura repeatedly expressly discloses a “display device with [a] touch panel.” *See, e.g.*, Ex. 1004, (54) (Title: “DISPLAY DEVICE WITH TOUCH PANEL”), Abstract, [0003], [0026], [0036], [0055]; Ex. 1003, ¶84.

b) Element [1-A]

Nakamura discloses and renders obvious “the touch panel including a first substrate having a detection area to detect a coordinate and an outside area in which at least one external terminal is formed, a plurality of first lines to detect the coordinate in the detection area, a plurality of second lines to detect the coordinate in the detection area, each of the plurality of first lines traversing each of the plurality of second lines.” Ex. 1003, ¶¶85-92.

As shown in Fig. 1, Nakamura's touch panel includes first substrate SUB1 and second substrate SUB2, both of which include a detection area configured to detect a coordinate and an outside area in which at least one external terminal is formed. Ex. 1003, ¶86; Ex. 1004, [0051] (touch panel includes “a first peripheral circuit SC1, a second peripheral circuit SC2, a power supply, and a detection signal output terminal”), [0052], [0053] (“second peripheral circuit SC2 is connected to the second substrate SUB2, and selects the metal wiring line by line to input a voltage thereto from the power supply”), [0054] (“first peripheral circuit SC1 is connected to the first substrate SUB1, and selects the metal wiring line by line to detect a voltage therefrom”), Fig. 1:

FIG. 1

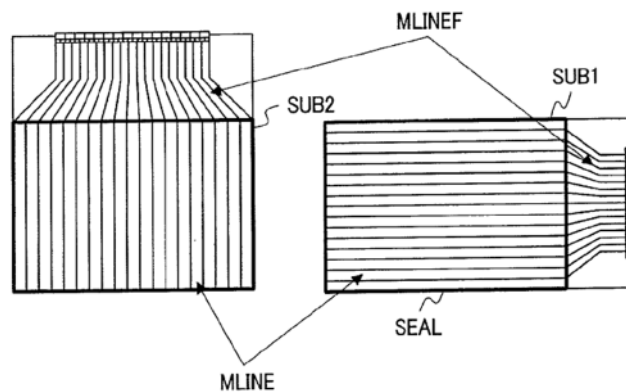


Either of Nakamura's substrates SUB1 and SUB2 can be the “first substrate” claimed in Claim 1, the only substrate expressly recited in the claim. Ex. 1003,

¶87. For simplicity, Petitioner will treat the bottom substrate SUB1 as the exemplary claimed “first substrate” for the remainder of this claim. *Id.* However, in the alternative, the top substrate SUB1 can also be the claimed “first substrate.” *Id.*

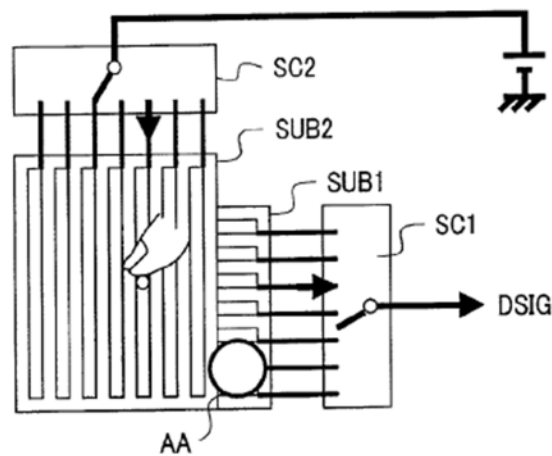
Nakamura additionally discusses the detection areas and outside areas of its substrates in which at least one external terminal is formed many more times. Ex. 1003, ¶88; Ex. 1004, [0079], [0083] (discussing the “detection area”), [0102] (same), [0105] (same), [0108] (same) [0095]-[0097] (discussing the “external terminals” and area “outside the detection area,” including “the external terminals and wirings MLINEF extending up to the external terminals”), [0111], Fig. 7 (showing MLINE wiring in detection areas and MLINEF wiring connecting to external terminals in outside areas):

FIG.7



Nakamura's first substrate (*i.e.*, bottom substrate SUB1, or, in the alternative, top substrate SUB2) includes a plurality of first lines to detect a coordinate in the detection area, and its second substrate includes a plurality of second lines to detect the coordinate in the detection area. Ex. 1003, ¶89; Ex. 1004, [0003], [0079] (“The coordinate detection is performed on the metal wiring”), [0053] (“second peripheral circuit SC2 is connected to the second substrate SUB2, and selects the metal wiring line by line to input a voltage thereto from the power supply”), [0054] (“first peripheral circuit SC1 is connected to the first substrate SUB1, and selects the metal wiring line by line to detect a voltage therefrom”), [0111] (“In a case where the metal wiring is used as a wiring for the coordinate detection as in Wiring Layout Modes 1 to 9...”), Fig. 1:

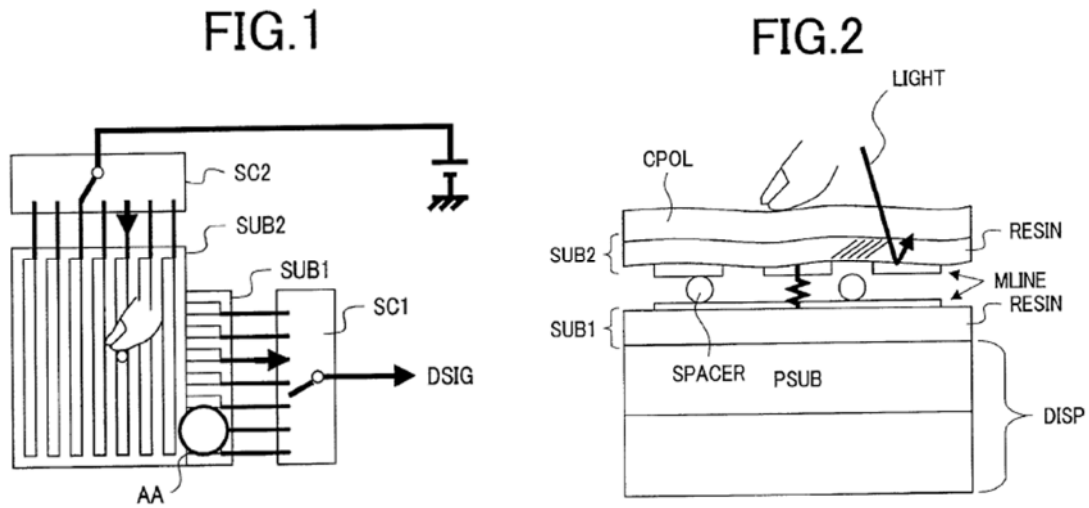
FIG. 1



Further, as shown in Figs. 1-2, Nakamura's first and second substrates “are

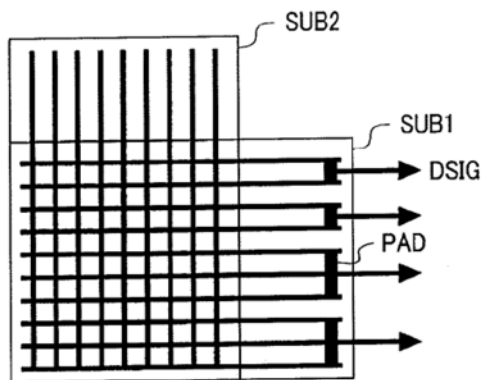
arranged so that their respective metal wirings face each other and that directions along which the respective metal wirings extend are made to intersect," *i.e.*, so that each of the plurality of first lines traverse each of the plurality of second lines.

Ex. 1003, ¶90; Ex. 1004, [0052], Figs. 1-2:



See also Ex. 1004, [0093], Fig. 6:

FIG. 6



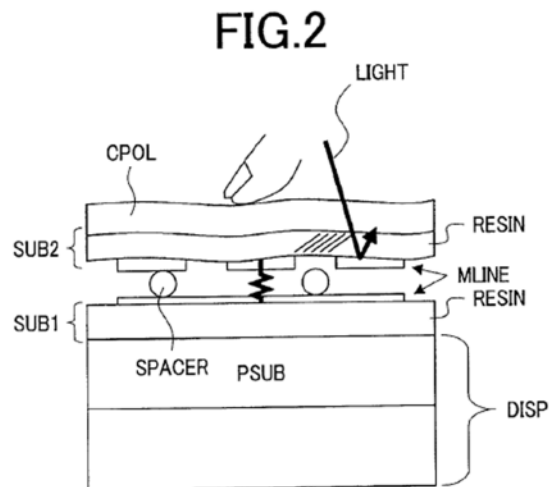
Indeed, the disclosure of this concept in the '758 patent is substantially similar to that of Nakamura, which the '758 patent expressly “adopts” in discussing it. Ex. 1003, ¶91; Ex. 1001, 6:45-7:14, Figs. 9-10.

Nakamura thus discloses and renders obvious a touch panel that includes a first substrate having a detection area to detect a coordinate and an outside area in which at least one external terminal is formed, a plurality of first lines to detect the coordinate in the detection area, a plurality of second lines to detect the coordinate in the detection area, each of the plurality of first lines traversing each of the plurality of second lines. Ex. 1003, ¶92.

c) Element [1-B]

Nakamura discloses and renders obvious “an organic emitting display panel under the touch panel.” Ex. 1003, ¶¶93-100.

As shown in Fig. 2, Nakamura discloses that “the touch panel of FIG. 1 is bonded to a surface of a display panel,” and the “display device with the touch panel includes a display panel substrate PSUB composing a display device DISP, the first substrate SUB1, the second substrate SUB2, a spacer SPACER, and a circularly polarizing plate CPOL.” Ex. 1003, ¶94; Ex. 1004, [0055], Fig. 2:



“The display panel substrate PSUB” constitutes “a display-surface-side substrate similar to a counter substrate of a liquid crystal display device and a sealing substrate of a top emission organic EL display device.” Ex. 1003, ¶95; Ex. 1004, [0055]. The “top emission organic EL display device” panel is “an organic emitting display panel.” Ex. 1003, ¶95. Specifically, a POSITA would have known that EL is an acronym for electroluminescent, and indeed, therefore, an organic emitting display panel is an organic electroluminescent display device. *Id.* The use of the phrase “top emission” in Nakamura further confirms this understanding, since it makes clear that the display is an emissive element, again exactly as is an organic “emitting” display panel. *Id.*

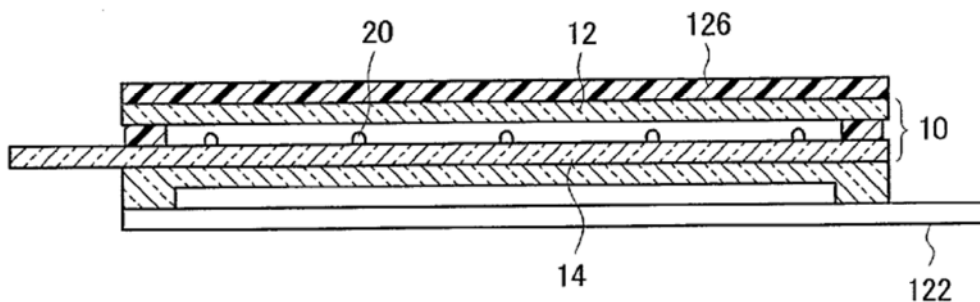
OLEDs like Nakamura’s organic EL display were well-known display devices in 2009. Ex. 1003, ¶96. POSITAs at the time understood that the selection of one type of well-known display device, such as a liquid crystal display or OLED

display, was an obvious and routine one that they could implement as they chose based on the design needs of their system. *Id.*

Further, Nakamura explains that “[t]he first substrate SUB1 is adhered onto the display panel substrate PSUB.” Ex. 1003, ¶97; Ex. 1004, [0055]. Thus, as shown in Fig. 2, the organic emitting display panel (*i.e.*, the organic EL display device) is located under the touch panel (*i.e.*, under the first substrate portion of the touch panel). Ex. 1003, ¶97; Ex. 1004, Fig. 2.

The disclosure of this concept in the ’758 patent is substantially similar to that of Nakamura. Ex. 1003, ¶98; Ex. 1001, 5:52-63, Fig. 6 (showing same arrangement of “circular polarizing plate” 126, “touch panel” 10 comprising substrates 12 and 14, and “organic EL display panel” 122):

FIG. 6



Indeed, during the prosecution of the ’758 patent’s child ’229 patent, the examiner expressly applied Nakamura against similar claim language. Ex. 1003, ¶99; Ex. 1006 (’229 File History), 8/2/2016 Office Action, pp. 7-8. The examiner

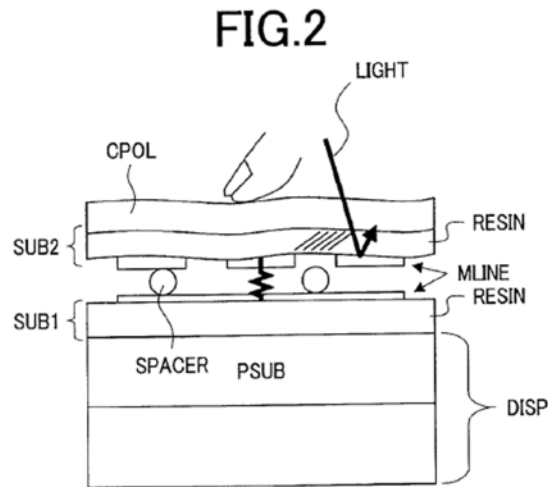
also stated that Nakamura discloses an “organic EL display, predetermined layer of resin, touch panel, and circular polarizing plate and polarizing circular plates [that] adheres to touch panel,” and a “touch panel with circular polarized plates bonded to resin with organic EL display.” *Id.* Patent owner did not dispute that Nakamura disclosed these concepts, and instead amended the claims. Ex. 1003, ¶99; Ex. 1006, 11/1/2016 Response.

Nakamura thus discloses and renders obvious an organic emitting display panel under the touch panel. Ex. 1003, ¶100.

d) Element [1-C]

Nakamura discloses and renders obvious “a circular polarizing plate arranged at a side of the touch panel opposite to the organic emitting display panel,” and that “the organic emitting display panel, the touch panel, and the circular polarizing plate are arranged in this order.” Ex. 1003, ¶¶101-106.

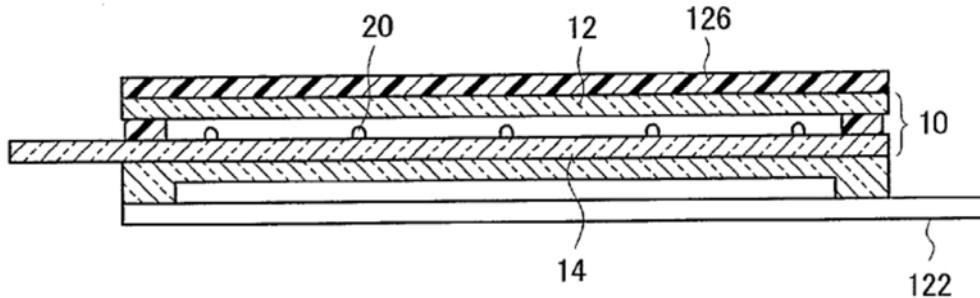
As discussed for the previous limitation, Nakamura’s Fig. 2 shows that “the touch panel of FIG. 1 is bonded to a surface of a display panel,” and the “display device with the touch panel includes a display panel substrate PSUB composing a display device DISP, the first substrate SUB1, the second substrate SUB2, a spacer SPACER, and a circularly polarizing plate CPOL.” Ex. 1003, ¶102; Ex. 1004, [0055], Fig. 2:



As shown in Fig. 2, “[t]he circularly polarizing plate CPOL is fixed onto the second substrate SUB2,” and so is arranged at a side of the touch panel opposite to the organic emitting display panel (the “top emission organic EL display device”) located in the display panel substrate PSUB. Ex. 1003, ¶103; Ex. 1004, [0055], Fig. 2. As also shown, “[t]he circularly polarizing plate CPOL is fixed onto the second substrate SUB2,” such that the organic emitting display panel (the “top emission organic EL display device”) the touch panel, and the circular polarizing plate are arranged “in this order.” *Id.*

The disclosure of this concept in the ’758 patent is substantially similar to that of Nakamura. Ex. 1003, ¶104; Ex. 1001, 5:52-63, Fig. 6 (showing same arrangement of “circular polarizing plate” 126, “touch panel” 10 comprising substrates 12 and 14, and “organic EL display panel” 122):

FIG. 6



Indeed, during the prosecution of the '758 patent's child '229 patent, the examiner expressly applied Nakamura against similar claim language. Ex. 1003, ¶105; Ex. 1006 ('229 File History), 8/2/2016 Office Action, pp. 7-8. The examiner also stated that Nakamura discloses a “circular polarizer [that] adheres to touch panel,” which the examiner stated was well known to a POSITA, an “organic EL display, predetermined layer of resin, touch panel, and circular polarizing plate and polarizing circular plates [that] adheres to touch panel please see figure 2,” and a “touch panel with circular polarized plates bonded to resin with organic EL display.” *Id.* Patent owner did not dispute that Nakamura disclosed these concepts, and instead amended the claims. Ex. 1003, ¶105; Ex. 1006, 11/1/2016 Response.

Nakamura thus discloses and renders obvious a circular polarizing plate which is arranged at a side of the touch panel opposite to the organic emitting

display panel, and that the organic emitting display panel, the touch panel, and the circular polarizing plate are arranged in this order. Ex. 1003, ¶106.

2. Claim 2

Claim 2 depends from Claim 1 and further requires that “each of the plurality of second lines and the plurality of first lines is made of metal” and “each of the plurality of first lines is black in color.”

Nakamura discloses and renders obvious this additional limitation.

Ex. 1003, ¶¶107-113. Indeed, the disclosure of this concept in the '758 patent is the same as in Nakamura. Ex. 1003, ¶109; Ex. 1001, 6:45-67, 7:45-48, 8:34-37.

Nakamura expressly states that the first lines and second lines are “configured of metal.” Ex. 1003, ¶110; Ex. 1004, [0052] (“The first substrate SUB1 and the second substrate SUB2 are arranged so that their respective metal wirings face each other and that directions along which the respective metal wirings extend are made to intersect”), [0053] (“The second peripheral circuit SC2 is connected to the second substrate SUB2, and selects the metal wiring line by line to input a voltage thereto from the power supply”), [0054] (“The first peripheral circuit SC1 is connected to the first substrate SUB1, and selects the metal wiring line by line to detect a voltage therefrom”), [0066] (“Possible materials of the metal wiring include an opaque metal film made of aluminum (Al), carbon (C), nonferrous metal such as copper (Cu), stainless steel (SUS), or iron (Fe)"); *see also*

Ex. 1004, [0028], [0032], [0050]-[0053], [0055]-[0065], [0067]-[0069], [0071]-[0111].

Nakamura also discloses that any of its lines, including the first lines, may be “black in color.” Ex. 1003, ¶111; Ex. 1004, [0078] (“By changing the color of the above-mentioned metal wiring into black, it is possible to raise a contrast of a display such as a liquid crystal equipped with a touch panel”).

Indeed, during the prosecution of the ’758 patent’s child ’229 patent, the examiner expressly applied Nakamura against similar claim language. Ex. 1003, ¶112; Ex. 1006 (’229 File History), 8/2/2016 Office Action, p. 9. Patent owner did not dispute that Nakamura disclosed this concept, and instead amended the claims. Ex. 1003, ¶112; Ex. 1006, 11/1/2016 Response.

Nakamura thus discloses and renders obvious that each of the plurality of second lines and the plurality of first lines is made of metal and that each of the plurality of first lines is black in color. Ex. 1003, ¶113.

3. Claim 3

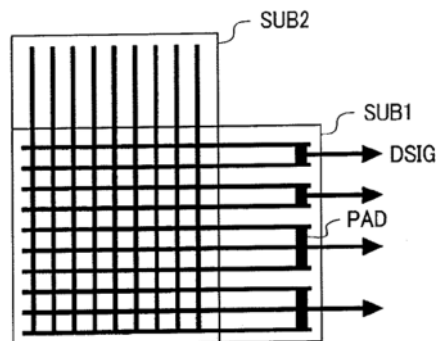
Claim 3 depends from Claim 2 and further requires that “the touch panel includes a plurality of wiring groups,” “each of plurality of wiring groups has some of the first lines,” and that “some of the first lines in each of plurality of wiring groups are bonded with each other.”

Nakamura discloses and renders obvious this additional limitation.

Ex. 1003, ¶¶114-121. Indeed, the disclosure of this concept in the '758 patent is the same as in Nakamura. Ex. 1003, ¶116; Ex. 1001, 9:17-26, Fig. 14.

As shown in Fig. 6, the metal wiring MLINES on Nakamura's substrates can be combined with each other to form wiring groups (*i.e.*, bonded with each other), that each of the wiring groups can comprise some of the first lines, and that some of the first lines in each plurality of wiring groups can be bonded with each other. Ex. 1003, ¶117; Ex. 1004, [0091] (“a terminal PAD for combining a plurality of metal wirings MLINE is provided in order to detect voltages of the plurality of metal wirings MLINE simultaneously, and a detection signal is output from each terminal PAD”), [0092] (“If the coordinate detection high in definition is unnecessary, the plurality of metal wirings MLINE are combined, to thereby enhance a recognition rate”), Fig. 6:

FIG.6



This teaching regarding grouping the metal wirings applies equally to both

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of Nakamura's substrates, both of which use the same metal wirings MLINE for use in detecting the coordinates of a touch. Ex. 1003, ¶119; Ex. 1004, [0051], [0056]-[0057], [0079], Figs. 1-2, 7. The choice of which substrates and electrodes to use for the application of voltage and which to use for sensing of the voltage could be equally made for each substrate. Ex. 1003, ¶119. Similarly, the choice of grouping could be applied to the voltage application wiring and/or the sensing wiring without concern. *Id.* Thus, a POSITA would have understood that this teaching regarding grouping the metal wirings applies equally to both of Nakamura's substrates. *Id.*

Nakamura expressly states that “[t]his [Fig. 6 wiring] mode can be applied to the stripe-shaped metal wirings according to Wiring Layout Modes 1 and 2.” Ex. 1003, ¶118; Ex. 1004, [0093]. Wiring Layout Mode 1 is the preferred embodiment shown in Figs. 1-3. Ex. 1003, ¶118; Ex. 1004, [0050]-[0080].

During the prosecution of the '758 patent's child '229 patent, the examiner expressly applied Nakamura against similar claim language. Ex. 1003, ¶120; Ex. 1006 ('229 File History), 8/2/2016 Office Action, p. 8. The examiner also stated that “figures 16-21 suggest[] different wiring patterns are in groups and banded [sic] by being printed on the different films.” *Id.* Patent owner did not dispute that Nakamura disclosed this concept, and instead amended the claims. Ex. 1003, ¶120; Ex. 1006, 11/1/2016 Response.

Nakamura thus discloses and renders obvious that the touch panel includes a plurality of wiring groups, each of which has some of the first lines, and that some of the first lines in each plurality of wiring groups are bonded with each other.

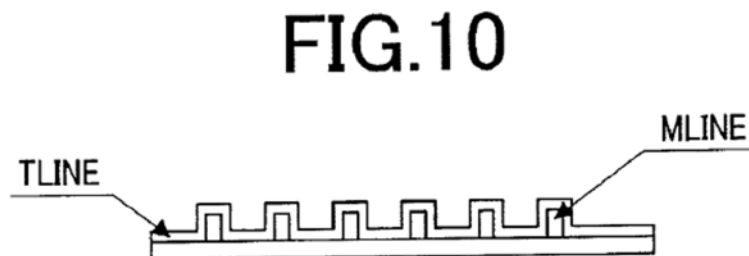
Ex. 1003, ¶121.

4. Claim 4

Claim 4 depends from Claim 3 and further requires that “a transparent conductive film overlays the plurality of the first lines” and “the transparent conductive film is electrically connected to the plurality of the first lines.”

Nakamura discloses and renders obvious this additional limitation. Ex. 1003, ¶¶122-130. Indeed, the disclosure of this concept in the '758 patent is the same as in Nakamura. Ex. 1003, ¶124; Ex. 1001, 9:63-10:3, Fig. 18.

As shown in Fig. 10, Nakamura discloses “that a transparent wiring (electrode) TLINE that covers the entirety of the detection area is located above the metal wiring MLINE.” Ex. 1003, ¶125; Ex. 1004, [0105], Fig. 10:



As explained throughout Nakamura, the transparent wiring TLINE is a transparent conductive film that is electrically connected to the metal lines

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MLINE. Ex. 1003, ¶126; Ex. 1004, [0007]-[0008], [0102], [0105]. And as shown in Fig. 10, TLINE overlays the MLINEs. Ex. 1003, ¶126.

Nakamura expressly states that “[t]his [Fig. 10 wiring] mode can be applied to the stripe-shaped metal wirings according to Wiring Layout Modes 1 to 5.”

Ex. 1003, ¶127; Ex. 1004, [0106]. Wiring Layout Mode 1 is the preferred embodiment shown in Figs. 1-3. Ex. 1003, ¶127; Ex. 1004, [0050]-[0080].

Indeed, during the prosecution of the ’758 patent’s child ’229 patent, the examiner expressly applied Nakamura against identical claim language. Ex. 1003, ¶128; Ex. 1006 (’229 File History), 8/2/2016 Office Action, pp. 10-11. Patent owner did not dispute that Nakamura disclosed this concept, and instead amended the claims. Ex. 1003, ¶128; Ex. 1006, 11/1/2016 Response.

To the extent Patent Owner argues that these teachings relating to Fig. 10 apply only to the second lines and not the first lines, that argument fails for many reasons: 1) the discussion of Fig. 10 does not limit which lines its teachings apply to; 2) as discussed, the disclosure of this concept in the ’758 patent is the same as in Nakamura; and 3) as also discussed, Nakamura was applied against identical claim language during related prosecution. At a minimum, a POSITA would have found it obvious to apply this concept to the first lines. Ex. 1003, ¶129. This is at least the case because the metal lines MLINE on both substrates are used for coordinate detection, such that both could benefit from transparent conductive film

overlays. *Id.*; *see also* Ex. 1004, [0079]. As discussed in Section VIII.A.3, either substrate could be used for voltage application or sensing, at least because the assignment of substrates is arbitrary and a POSITA would have recognized that either substrate could serve as the voltage application or voltage sensing substrate. Ex. 1003, ¶129.

Nakamura thus discloses and renders obvious that a transparent conductive film overlays the plurality of the first lines and the transparent conductive film is electrically connected to the plurality of the first lines. Ex. 1003, ¶130.

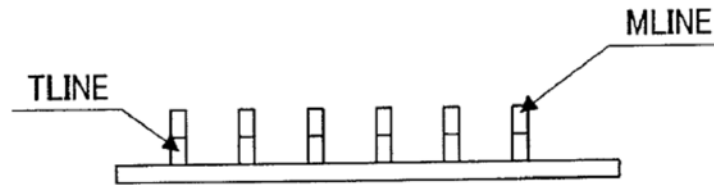
5. Claim 5

Claim 5 depends from Claim 3 and further requires that “a transparent conductive film underlays the plurality of the first lines” and “the transparent conductive film is electrically connected to the plurality of the first lines.”

Nakamura discloses and renders obvious these additional limitations in several embodiments. Ex. 1003, ¶¶131-141. Indeed, the disclosure of this concept in the '758 patent is the same as in Nakamura. Ex. 1003, ¶133; Ex. 1001, 9:47-62, Figs. 16-17.

First, as shown in Fig. 8, Nakamura discloses “that a stripe-shaped transparent wiring TLINE having the same pattern as that of the metal wiring MLINE is located under the metal wiring MLINE.” Ex. 1003, ¶134; Ex. 1004, [0099], Fig. 8:

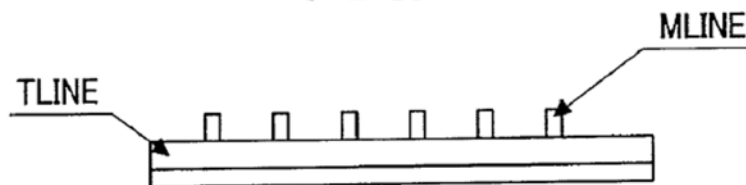
FIG.8



As explained throughout Nakamura, the transparent wiring TLINE is a transparent conductive film that is electrically connected to the metal lines. Ex. 1003, ¶135; Ex. 1004, [0007]-[0008], [0099], [0102], [0105]. And as applied to and shown in Fig. 8, a collection of TLINES underlays and connects to the plurality of MLINES. Ex. 1003, ¶135.

Second, as shown in Fig. 9, Nakamura discloses “that a transparent wiring (electrode) TLINE that covers the entirety of the detection area is located under the metal wiring MLINE.” Ex. 1003, ¶136; Ex. 1004, [0102], Fig. 9:

FIG.9



Here again, TLINE underlays the MLINES. Ex. 1003, ¶137.

Nakamura expressly states that the wirings shown in all of Figs. 8-9 “can be applied to the stripe-shaped metal wirings according to Wiring Layout Modes 1 to

5.” Ex. 1003, ¶138; Ex. 1004, [0100], [0103]. Wiring Layout Mode 1 is the preferred embodiment shown in Figs. 1-3. Ex. 1003, ¶138; Ex. 1004, [0050]-[0080].

Indeed, during the prosecution of the ’758 patent’s child ’229 patent, the examiner expressly applied Nakamura against identical claim language. Ex. 1003, ¶139; Ex. 1006 (’229 File History), 8/2/2016 Office Action, p. 11. Patent owner did not dispute that Nakamura disclosed this concept, and instead amended the claims. Ex. 1003, ¶139; Ex. 1006, 11/1/2016 Response.

To the extent Patent Owner argues that these teachings relating to Figs. 8-9 apply only to the second lines and not the first lines, that argument fails for many reasons: 1) the discussion of Figs. 8-9 does not limit which lines its teachings apply to; 2) as discussed, the disclosure of this concept in the ’758 patent is the same as in Nakamura; and 3) as also discussed, Nakamura was applied against identical claim language during related prosecution. At a minimum, a POSITA would have found it obvious to apply this concept to the first lines. Ex. 1003, ¶140. This is at least the case because the metal lines MLINE on both substrates are used for coordinate detection, such that both could benefit from transparent conductive film overlays. *Id.*; *see also* Ex. 1004, [0079]. As discussed in Section VIII.A.3, either substrate could be used for voltage application or sensing, at least because the assignment of substrates is arbitrary and a POSITA would have

recognized that either substrate could serve as the voltage application or voltage sensing substrate. Ex. 1003, ¶140. The choice of which lines to use for voltage application or sensing could thus also be made between the two sets of lines without issue, since the assignment of substrates is simply a matter of choice. *Id.*

Nakamura thus discloses and renders obvious that a transparent conductive film underlays the plurality of the first lines and the transparent conductive film is electrically connected to the plurality of the first lines. Ex. 1003, ¶141.

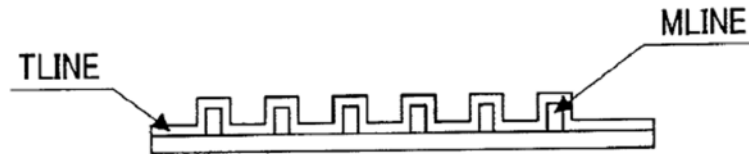
6. Claim 6

Claim 6 depends from Claim 2 and further requires that “a transparent conductive film overlays the plurality of the second lines” and “the transparent conductive film is electrically connected to the plurality of the second lines.”

Nakamura discloses and renders obvious this additional limitation. Ex. 1003, ¶¶142-149. Indeed, the disclosure of this concept in the '758 patent is the same as in Nakamura. Ex. 1003, ¶144; Ex. 1001, 9:63-10:3, Fig. 18.

As shown in Fig. 10, Nakamura discloses “that a transparent wiring (electrode) TLINE that covers the entirety of the detection area is located above the metal wiring MLINE.” Ex. 1003, ¶145; Ex. 1004, [0105], Fig. 10:

FIG. 10



As explained throughout Nakamura, the transparent wiring TLINE is a transparent conductive film that is electrically connected to the metal lines. Ex. 1003, ¶146; Ex. 1004, [0007]-[0008], [0102], [0105]. And as shown in Fig. 10, TLINE overlays the MLINES. Ex. 1003, ¶146.

Nakamura expressly states that “[t]his [Fig. 10 wiring] mode can be applied to the stripe-shaped metal wirings according to Wiring Layout Modes 1 to 5.” Ex. 1003, ¶147; Ex. 1004, [0106]. Wiring Layout Mode 1 is the preferred embodiment shown in Figs. 1-3. Ex. 1003, ¶147; Ex. 1004, [0050]-[0080].

Indeed, during the prosecution of the ’758 patent’s child ’229 patent, the examiner expressly applied Nakamura against similar claim language. Ex. 1003, ¶148; Ex. 1006 (’229 File History), 8/2/2016 Office Action, p. 10. Patent owner did not dispute that Nakamura disclosed this concept, and instead amended the claims. Ex. 1003, ¶148; Ex. 1006, 11/1/2016 Response.

Nakamura thus discloses and renders obvious that a transparent conductive film overlays the plurality of the second lines and the transparent conductive film is electrically connected to the plurality of the second lines. Ex. 1003, ¶149.

7. Claim 7

Claim 7 depends from Claim 2 and further requires that “a transparent conductive film underlays the plurality of the second lines” and “the transparent conductive film is electrically connected to the plurality of the second lines.”

Nakamura discloses and renders obvious these additional limitations in several embodiments. Ex. 1003, ¶¶150-159. Indeed, the disclosure of this concept in the '758 patent is the same as in Nakamura. Ex. 1003, ¶152; Ex. 1001, 9:47-62, Figs. 16-17.

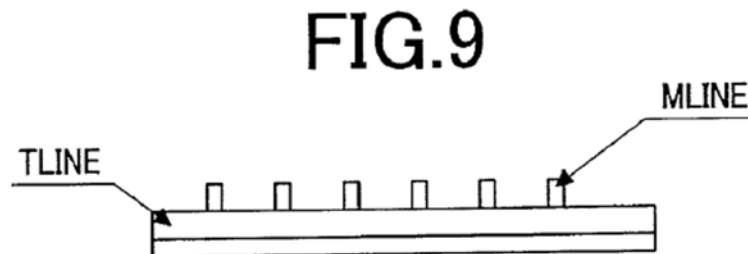
First, as shown in Fig. 8, Nakamura discloses “that a stripe-shaped transparent wiring TLINE having the same pattern as that of the metal wiring MLINE is located under the metal wiring MLINE.” Ex. 1003, ¶153; Ex. 1004, [0099], Fig. 8:



As explained throughout Nakamura, the transparent wiring TLINE is a transparent conductive film that is electrically connected to the metal lines. Ex. 1003, ¶154; Ex. 1004, [0007]-[0008], [0102], [0105]. And as applied to and shown in Fig. 8, a collection of TLINEs underlays and connects to the plurality of

MLINEs. Ex. 1003, ¶154.

Second, as shown in Fig. 9, Nakamura discloses “that a transparent wiring (electrode) TLINE that covers the entirety of the detection area is located under the metal wiring MLINE.” Ex. 1003, ¶155; Ex. 1004, [0102], Fig. 9:



Here again, TLINE underlays the MLINEs. Ex. 1003, ¶156.

Nakamura expressly states that the wirings shown in all of Figs. 8-9 “can be applied to the stripe-shaped metal wirings according to Wiring Layout Modes 1 to 5.” Ex. 1003, ¶157; Ex. 1004, [0100], [0103]. Wiring Layout Mode 1 is the preferred embodiment shown in Figs. 1-3. Ex. 1003, ¶157; Ex. 1004, [0050]-[0080].

Indeed, during the prosecution of the '758 patent's child '229 patent, the examiner expressly applied Nakamura against identical claim language. Ex. 1003, ¶158; Ex. 1006 ('229 File History), 8/2/2016 Office Action, p. 11. Patent owner did not dispute that Nakamura disclosed this concept, and instead amended the claims. Ex. 1003, ¶158; Ex. 1006, 11/1/2016 Response.

Nakamura thus discloses and renders obvious that a transparent conductive film underlays the plurality of the second lines and the transparent conductive film is electrically connected to the plurality of the second lines. Ex. 1003, ¶159.

8. Claim 8

Claim 8 depends from Claim 1 and further requires that “the touch panel is a resistance-film-type touch panel.”

Nakamura discloses and renders obvious this additional limitation. Ex. 1003, ¶¶160-165. Indeed, the disclosure of this concept in the '758 patent is the same as in Nakamura. Ex. 1003, ¶162; Ex. 1001, 1:22-2:15, 7:54-67, 8:44-50, Figs. 10, 21.

Nakamura discusses how resistive sensing touch panels (which it refers to as “resistive film systems”) were well-known, and “conventional” in the art, as shown by prior art Fig. 14 and the “resistive film system” of Takaya. Ex. 1003, ¶163; Ex. 1004, [0005]-[0009], Fig. 14.

Nakamura then explains that it too discloses a resistive sensing system that overcomes the alleged drawbacks of Takaya. Ex. 1003, ¶164; Ex. 1004, [0010]-[0011]; *see also* Ex. 1004, [0068], [0080], Fig. 2.

Nakamura thus discloses and renders obvious that the touch panel is a resistance-film-type touch panel. Ex. 1003, ¶165.

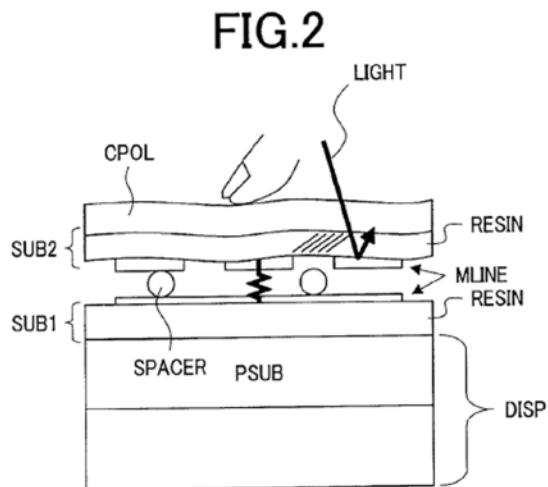
B. GROUND 2: Claim 9 Is Obvious Over Nakamura Alone, As Well As Nakamura in Combination with Hinata '741

1. Claim 9

Claim 9 depends from Claim 1 and further requires “a first adhesive layer between the touch panel and the organic emitting display panel” and “a second adhesive layer between the touch panel and the circular polarizing plate,” “wherein the touch panel and the organic emitting display panel are fixed with each other by the first adhesive layer, and the touch panel and the circular polarizing plate are fixed with each other by the second adhesive layer.”

Nakamura discloses and renders obvious this additional limitation, both alone and in combination with Hinata '741. Ex. 1003, ¶¶166-185.

As discussed above for Claim 1, Nakamura's Fig. 2 shows an organic emitting display panel (the “top emission organic EL display device”), touch panel, and circular polarizing plate, arranged in that order. *See* Section VIII.A.1; Ex. 1003, ¶170; Ex. 1004, [0055], Fig. 2:



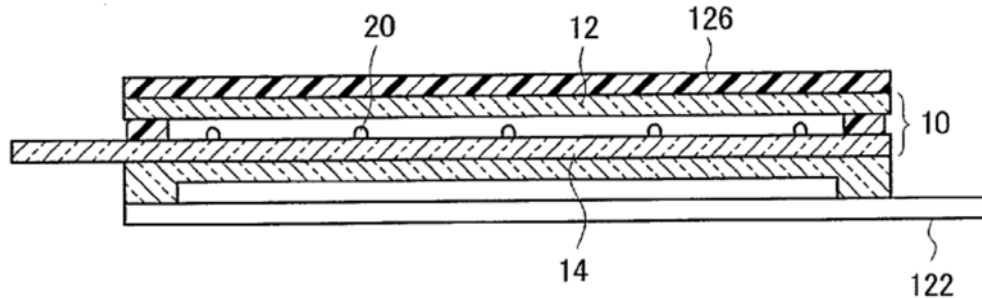
Nakamura states that the first substrate SUB1 is both “adhered onto the display panel substrate PSUB” and “fixed onto the display panel substrate PSUB,” and that PSUB comprises “a sealing substrate of a top emission organic EL display device.” Ex. 1003, ¶171; Ex. 1004, [0055]. The point where the first substrate SUB1 is adhered onto and fixed onto the display panel substrate PSUB thus discloses and renders obvious the claimed “first adhesive layer” between the organic emitting display panel and the touch panel that adheres and fixes them with each other. Ex. 1003, ¶171. A POSITA would recognize that the material at that point is necessarily a physical layer and, since Nakamura clearly indicates that it is adhered therein, it would, at a minimum, be obvious for this adhesion to constitute an adhesive layer. *Id.* Indeed, there is no requirement in the claim at issue, nor would a POSITA interpret it to require, that the material of the adhesive layer be a different material or be formed in an entirely different process than the layer

sequentially below it. *Id.*

Nakamura further states that “[t]he circularly polarizing plate CPOL is fixed onto the second substrate SUB2.” Ex. 1003, ¶172; Ex. 1004, [0055]. The point where the CPOL is fixed onto the second substrate SUB2 thus discloses and renders obvious the claimed “second adhesive layer” between the touch panel and the circular polarizing plate that fixes them with each other. Ex. 1003, ¶172. As Nakamura clearly indicates that the polarizing plate is fixed onto the second substrate SUB2, a POSITA would recognize that this fixing would involve a physical layer and that, at a minimum, it would be obvious to fix the polarizing plate onto the second substrate SUB2 by adhering it, thus constituting an adhesive layer. *Id.* Again, there is no requirement in the claim at issue, nor would a POSITA interpret it to require, that the material of the adhesive layer be a different material or be formed in an entirely different process than the layer sequentially below it. *Id.*

To the extent patent owner argues that these disclosures do not satisfy Claim 9 or render it obvious because they do not disclose a physically separate adhesive layer, Petitioner notes that the disclosure of this concept in the ’758 patent is substantially similar to that of Nakamura. Ex. 1003, ¶173; Ex. 1001, 5:52-63, Fig. 6 (showing same arrangement of “circular polarizing plate” 126, “touch panel” 10 comprising substrates 12 and 14, and “organic EL display panel” 122):

FIG. 6



Like Nakamura, the '758 patent states only that “[t]he touch panel 10 is adhered to a display screen of the display panel 122, and a resin film 126 is adhered to the touch panel 10.” Ex. 1003, ¶174; Ex. 1001, 5:58-60. It thus also does not recite, or depict in its Figures, physically separate adhesive layers, but rather states only that the components are “adhered” to each other. Ex. 1003, ¶174. In addition to not even reciting physically separate adhesive layers, the '758 patent specification does not provide any discussion of what form such an adhesive layer would take, much less allege the concept was novel or nonobvious. *Id.* Thus, to the extent patent owner argues this claim requires physically separate adhesive “layers,” it would be invalid under 35 U.S.C. § 112 for lack of written description. *Id.*

Indeed, during the prosecution of the '758 patent's child '229 patent, the examiner expressly applied Nakamura against claim language relating to these same components being “adhered” together. Ex. 1003, ¶175; Ex. 1006 ('229 File

History), 8/2/2016 Office Action, pp. 7-8. The examiner also stated that Nakamura discloses a “circular polarizer [that] adheres to touch panel,” which the examiner stated was well known to a POSITA, an “organic EL display, predetermined layer of resin, touch panel, and circular polarizing plate and polarizing circular plates [that] adheres to touch panel please see figure 2,” and a “touch panel with circular polarized plates bonded to resin with organic EL display.” *Id.* Patent owner did not dispute that Nakamura disclosed these concepts, and instead amended the claims. Ex. 1003, ¶175; Ex. 1006, 11/1/2016 Response.

In view of these considerations and Nakamura’s express disclosures that the components are “adhered” and “fixed” together in the claimed arrangement, a POSITA would have additionally considered it obvious for those components to have been adhered together using a separate “first adhesive layer” and “second adhesive layer.” Ex. 1003, ¶176.

In 2009, there were only a few ways to adhere touch panel components together. Ex. 1003, ¶177. These included using a physically separate adhesive layer, as well as the using the interfacing surfaces of one or both of the materials being adhered as the adhesive layer. *Id.* It would have been a routine design choice to select any one of these ways in order to accommodate the needs of a particular touch panel. *Id.* The most common-sense way of doing so would have been using a physically separate adhesive layer. *Id.* In particular, for touch panel

applications such as displays with touch-panels integrated on them, it was particularly beneficial to use a physically separate adhesive layer in order to first allow for complete fabrication of the display (even in a different factory or location, for example), and then adhering the touch panel on top using such a separate adhesive layer. *Id.* In 2009, it was common to utilize a number of common methods of forming adhesives, including coating and laminated and deposited adhesives, and the selection of any of these methods would have been an obvious, routine design choice. *Id.* Deposition of adhesives was well-known in the semiconductor and display industries and would have been straightforward to implement using equipment and processes that were well-known and common in the same, and would have enabled easy adhesion of layers even in the large areas associated with many touch-integrated displays. *Id.* Indeed, the use of laminated or deposited adhesion films was common in the industry and eliminated concerns with process integration and contamination when the surfaces of the layers being joined are themselves adhered without a separate adhesive layer. *Id.* The use of a physically separate adhesive layer may also allow for a greater strength of adhesion in situations where the surface of a layer has low adhesion. *Id.* A POSITA thus would have been particularly motivated to implement Nakamura using physically separate adhesive layers when employing its touch panel in such applications. *Id.*

Thus, a POSITA would have considered it obvious to fix Nakamura's touch panel and organic emitting display panel with each other using a physically separate first adhesive layer and to fix Nakamura's touch panel and circular polarizing plate with each other using a using a physically separate second adhesive layer. Ex. 1003, ¶178.

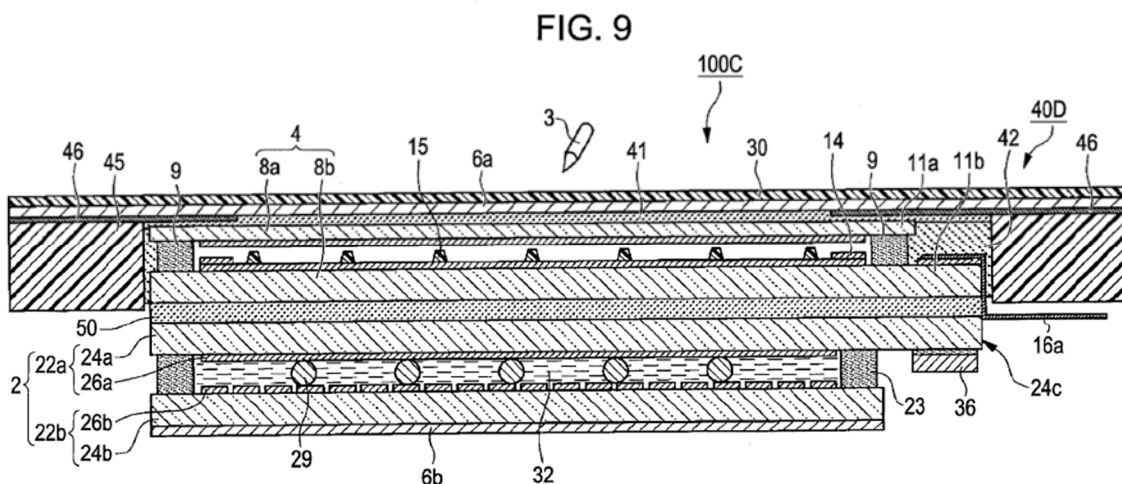
To the extent Patent Owner argues that a POSITA would not have found it obvious to adhere Nakamura's touch panel, organic emitting display panel, and circular polarizing plate to each other using physically separate adhesive layers in view of Nakamura alone, they would have found it obvious to do so in view of Nakamura combined with Hinata '741. Ex. 1003, ¶179.

A POSITA would have been motivated to combine Nakamura and Hinata '741 for at least the reasons discussed in Section VII.C above, as well as those discussed below. Ex. 1003, ¶¶180-185.

Hinata '741 discloses a number of touch panel embodiments that can comprise a variety of structures, including a number of ways that its various components can be adhered together, each in greater detail than the '758 patent does. Ex. 1003, ¶181; Ex. 1005, [0008]-[0009], [0019]-[0022] (discussing using “[a]n adhesive”), [0030] (discussing “optically adher[ing]”), [0048]-[0052] (discussing “vacuum thermal-welding method” of adhesion), [0083], [0095] (“various adhesive compounds, such as acrylic adhesive compounds, rubber-based

adhesive compounds, and silicon based adhesive compounds, may be used”).

Consistent with this varied disclosure, Hinata '741 discloses embodiments using adhesive layer 41 between polarizing plate 6a and touch panel 4. Ex. 1003, ¶182; Ex. 1005, [0008]-[0009], [0019]-[0022], [0030], [0048]-[0052], [0083], [0095], Figs. 5, 9 (applying the above adhering teachings to adhesive layer 41). It also discloses embodiments using adhesive layer 50 between display panel 2 and touch panel 4. *Id.*; see also Ex. 1005, Figs. 7A, 8, 9, 18 (applying the above adhering teachings to adhesive layer 50). Thus, Hinata '741's Fig. 9 embodiment discloses both of the adhesive layers recited in '758 patent Claim 9, *i.e.*, first adhesive layer 41 between polarizing plate 6a and touch panel 4, and second adhesive layer 50 between display panel 2 and touch panel 4. Ex. 1003, ¶182; Ex. 1005, Fig. 9:



While the paragraphs cited above reference an LCD display panel, Hinata

'741 explicitly discloses that an organic EL panel can be used in any of its embodiments, rather than an LCD panel. Ex. 1003, ¶183; Ex. 1005, [0029], [0056].

A POSITA would have been motivated to apply Hinata '741's physically separate adhesive layers to the touch panel, organic emitting display panel, and circular polarizing plate that Nakamura explains are adhered to each other for the same reasons discussed above in relation to the benefits of using an adhesive layer—namely, ease of implementation, applicability to large area systems such as displays with touch screens, the use of common equipment and processes, and the potential for a greater strength of adhesion. Ex. 1003, ¶184.

Thus, it would have been obvious to a POSITA to obvious to adhere Nakamura's touch panel, organic emitting display panel, and circular polarizing plate to each other using physically separate adhesive layers in view of Nakamura alone, and also as taught by Hinata '741. Ex. 1003, ¶185.

IX. SECONDARY CONSIDERATIONS

Petitioner is not aware of any secondary considerations that would overcome the strong showing of obviousness provided by the Petition. Ex. 1003, ¶186.

Further, any attempt by Patent Owner to rely on alleged secondary considerations cannot overcome the showing of obviousness detailed above. *Tokai Corp. v.*

Easton Enters., Inc., 632 F.3d 1358, 1370 (Fed. Cir. 2011).

Inter Partes Review

United States Patent No. 9,250,758

X. CONCLUSION

For the foregoing reasons, Petitioner respectfully requests the Board institute review of the '758 patent and cancel all Challenged Claims.

Inter Partes Review

United States Patent No. 9,250,758

Date: July 10, 2025

Respectfully submitted,

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Inter Partes Review

United States Patent No. 9,250,758

CERTIFICATE OF WORD COUNT

The undersigned certifies that the foregoing PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 9,250,758 UNDER 35 U.S.C. §§ 311-319 and 37 C.F.R. § 42 ET SEQ. complies with the type volume limitation in 37 C.F.R. § 42.24(a)(1)(i). According to the utilized word-processing system's word count, the petition—excluding the caption, table of contents, a table of authorities, mandatory notices under § 42.8, certificate of service, certificate of word count, or listing of exhibits, and claim listing—contains 10,313 words.

Dated: July 10, 2025

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