

Case IPR2024-00013
Patent No. 11,281,338
Patent Owner's Preliminary Response

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CHEMTRONICS USA, INC.,
Petitioner,

v.

FLATFROG LABORATORIES AB,
Patent Owner

Case: IPR2024-00013

U.S. Patent No. 11,281,338

PATENT OWNER'S PRELIMINARY RESPONSE

Mail Stop **Patent Board**
Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

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PATENT OWNER'S EXHIBIT LIST

No.	Reference	Referred To As
2001	U.S. Patent No. 10,739,916	'916 Patent
2002	Prosecution History of U.S. Patent No. 10,739,916	'916 Patent Prosecution History
2003	Promethean's Invalidity Contentions	Promethean Invalidity Contentions
2004	Exhibit 8 Claim Chart, Promethean Invalidity Contentions	Exhibit 8 Claim Chart, Promethean Invalidity Contentions
2005	WO2014131221 (Weishan) and accompanying Google Patents English Translation	Weishan

I. INTRODUCTION

Patent Owner Flatfrog Laboratories AB (“Patent Owner”) respectfully requests that the Board deny institution because Petitioner Chemtronics USA, Inc. (hereinafter “Petitioner” or “Chemtronics”) has failed to demonstrate a reasonable likelihood of success in its Petition challenging claims 1-15 (the “challenged claims”) of U.S. Patent No. 11,281,338 (“the ’338 Patent”).

The Board should decline to institute under 35 U.S.C. § 325(d) because the Petition lacks merit and merely rehashes the same art and arguments previously considered by the USPTO Examiner. For example, Grounds 1A, 1B, and 2 rely on Chen-975 (i.e., Chen-WO) and Chen-812, which were expressly considered by the Examiner before allowance. ***Notably, the Petition fails to acknowledge that Chen-975 is nearly identical to Chen-WO used by the Examiner in an Office Action rejection during prosecution of the ’338 Patent parent application.*** Moreover, all of Petitioner’s Grounds utilize the same prior art arguments expressly considered—and overcome—before the Examiner. Indeed, the Examiner considered obviousness arguments regarding Weishan for the “sealing element” in the same way that the Petition relies on Chen-975 (Grounds 1A), Chen-812 (Ground 2) and Park (Ground 3). The inventors overcame such rejections as not obvious, as the Examiner recognized the patentability of the claims over such arguments.

Despite this prosecution history, Petitioner utilizes previously-considered art, and follows the same arguments that the Examiner previously rejected. Petitioner does not assert that anyone else invented a touch sensing apparatus containing a “sealing element” like the one claimed in the ’338 Patent. Petitioner offers no references that allegedly anticipate any claims of the ’338 Patent. Instead, Petitioner offers the same obviousness arguments previously considered—e.g., the teachings of Weishan of an “optical overlay” (optical filter) as allegedly disclosing the claimed sealing element. Thus, this Petition is wholly duplicative of arguments already considered by the Office.

For at least these reasons, Petitioner has failed to meet its burden of showing a reasonable likelihood of prevailing and Board should exercise its discretion to deny institution pursuant to 35 U.S.C. § 325(d).

II. BACKGROUND

A. Overview of the ’338 Patent Invention

The ’338 Patent relates to above surface optical touch systems, such as those used in large screen interactive displays or “touch screens,” which allow multiple users to work together on a large display. More specifically, the ’338 Patent relates to optical and mechanical solutions for defining the light paths and control of curvature of the panel. *See* Ex. 1001, ’338 Patent at 1:15-21. The ’338 Patent claimed

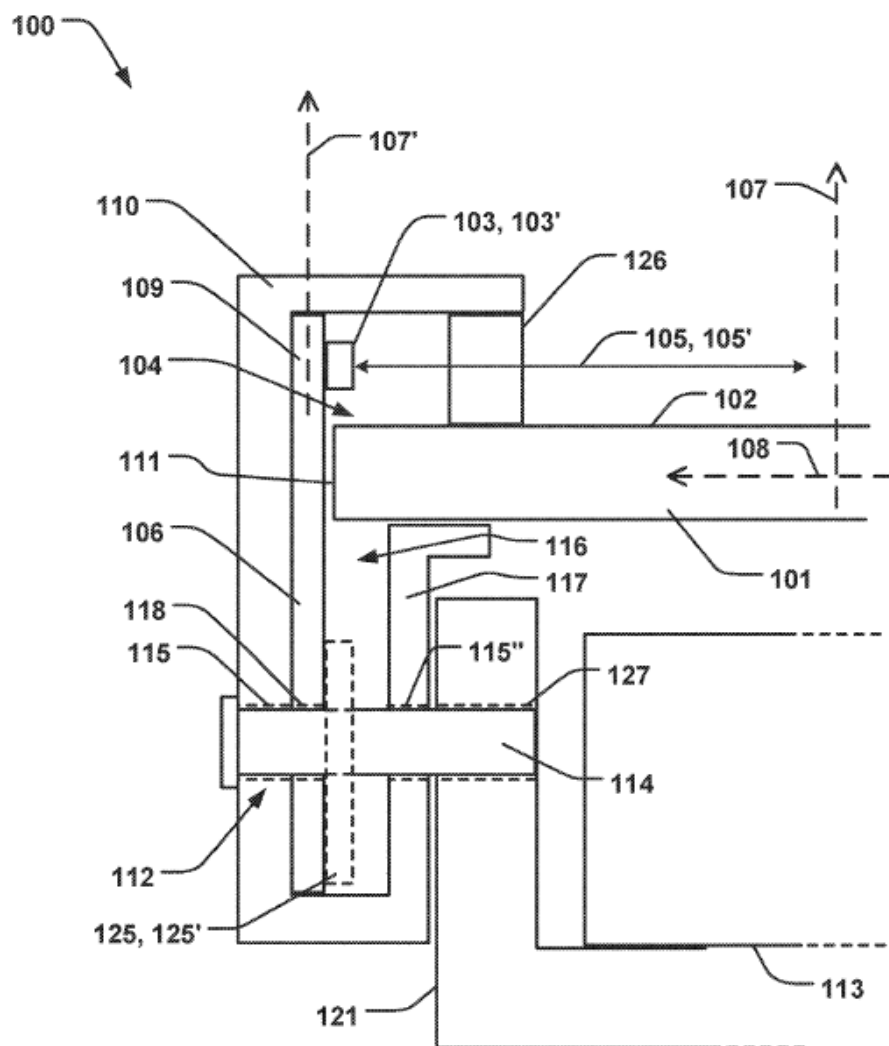
invention relates to a touch surface device comprising a substrate that supports the touch surface's light emitters and is itself supported by a support structure comprising a sealing element fitted between the touch surface and the support structure. *Id.* at Claim 1; 1:15:59-16:3. The claimed invention is thus directed to specific components arranged in a very specific manner.

The '338 Patent recognized that conventional systems at the time had issues with their arrangement of required components. *Id.* at 1:62-2:8. For example, the panels comprising the touch surface, substrates, light emitters, supporting structures, and sealing element were cumbersome, difficult, and costly to align, resulting in sub-optimal alignment causing signal loss. *Id.* at 1:62-67. The '338 Patent also identified uncontrolled glass warpage as another issue affecting the signal and scattering of the light in the touch sensing apparatus, i.e., distortions of the curvature of the light transmissive panel, which will affect the light path and the detection process. *Id.* at 2:1-4. The '338 Patent recognized that it is critical to accurately control such distortions and explained that prior systems failed to provide adequate solutions because they incorporated complex solutions that did not allow for fully optimized glass warpage control in a mass production line without limiting the throughput of the production. *Id.* at 2:4-8.

The inventors of the '338 Patent solved these problems by the novel arrangement of the claimed components, which include a substrate that supports the touch surface's light emitters and is itself supported by a support structure comprising a sealing element fitted between the touch surface and the support structure. *Id.* at Claim 1; 1:15:59-16:3. More specifically, the '338 Patent discloses an example where a touch sensing apparatus comprises a panel that defines a touch surface, a plurality of light emitters and detectors arranged along a perimeter of the panel. *Id.* at 2:38-47. The light emitters are arranged to emit a respective beam of emitted light above the touch surface, wherein the light detectors are arranged to receive detection light from the emitted light. *Id.* The plurality of light emitters and detectors are connected to a substrate extending in a direction parallel with a normal axis of a plane in which the panel extends. *Id.*

As explained by the '338 Patent, the substrate may extend at least partly above the touch surface, whereby the plurality of light emitters and detectors are connected to a portion of the substrate extending above the touch surface. *Id.* at 2:50-52. Having the substrate extending in the direction being parallel with the normal axis and the emitters and detectors arranged above the touch surface provides for a less complex alignment, which maximizes the detection performance of the touch sensing apparatus. *Id.* at 8:21-47. Moreover, the position of the substrate in the direction of

the normal axis can be varied to achieve optical alignment with respect to the emitters and detectors. *Id.* And the ability to achieve an accurate positioning of the substrate, and consequently the emitters and detectors, is also due to the increased accuracy by which the dimensions of the substrate can be defined along the direction of the substrate aligned with the normal axis as shown by FIG. 2. *Id.*; see Fig. 2.



Id., Fig. 2.

In this manner, the substrate 106 is elongated and extends in a longitudinal direction 123 (FIG. 4a) around the perimeter 104 of the light transmissive panel 101, and it has a short-side extending in parallel with the normal axis 107. *Id.* at 8:32-38. The short-side of the substrate 106, illustrated in the cross-sectional view of Fig. 2, may be manufactured to smaller tolerances, and by aligning this side with the normal axis 107, the tolerances for the alignment of the emitters and detectors 103, 103', along the normal axis 107 can be improved. *Id.* The alignment can thus be both improved and facilitated. *Id.* The latter advantage also provides for facilitated and less costly mass production of the touch sensing apparatus 100 and the various touch base display systems in which it may be implemented. *Id.* at 8:38-47. In addition, the substrate may extend at least partly above the touch surface, whereby the plurality of light emitters and detectors are connected to a portion of the substrate extending above the touch surface. *Id.* This further provides for achieving a more robust alignment of the emitters and detectors, relative to the light transmissive panel, by being directly joined to the substrate, and thereby simultaneously arranged above the touch surface. *Id.* at 8:48-56.

In addition, as illustrated above in Figure 2, the touch sensing apparatus 100 may comprise a sealing window 126 (see Fig. 2), shielding the emitters and detectors 103, 103', from the outside. *Id.* at 8:11-14. The emitted and detected light 105, 105',

may thus only have to propagate through the sealing window 126 along the light path between the emitters and detectors 103, 103' and; therefore, the sealing window 126 provides sealing around the perimeter 104 of the light transmissive panel 101 and protects the emitters and detectors 103, 103' and the display. *Id.* at 8:14-19.

The sealing window comprises a dual purpose. First, it provides sealing around the perimeter of the light transmissive panel and protects the emitters, detectors, and the edge of the light transmissive panel. *Id.* at 16:26-30. This means that the sealing window prevents ingress of dirt, water and other contaminants into the interior of the touch sensing apparatus, which helps protect all of the internal components such as the plurality of emitters and detectors. *Id.* at 16:33-34. Second, the sealing window allows light from the emitters and detectors to propagate therethrough and can also either optionally comprise optical elements for refracting, deflecting, diverting or focusing the light beams therethrough, or be optically passive and not comprise any optical elements for refracting, deflecting, diverting or focusing the light beams therethrough. *Id.* at 16:34-43. In either case, as is discussed, several advantages are created by the specific manner in which the sealing window interacts with the other components of the '338 Patent. For example, the sealing window 126, once assembled, is sandwiched between the upper surface 702 of the carrier 110 and the light transmissive panel 101, as shown in Figure 8 below:

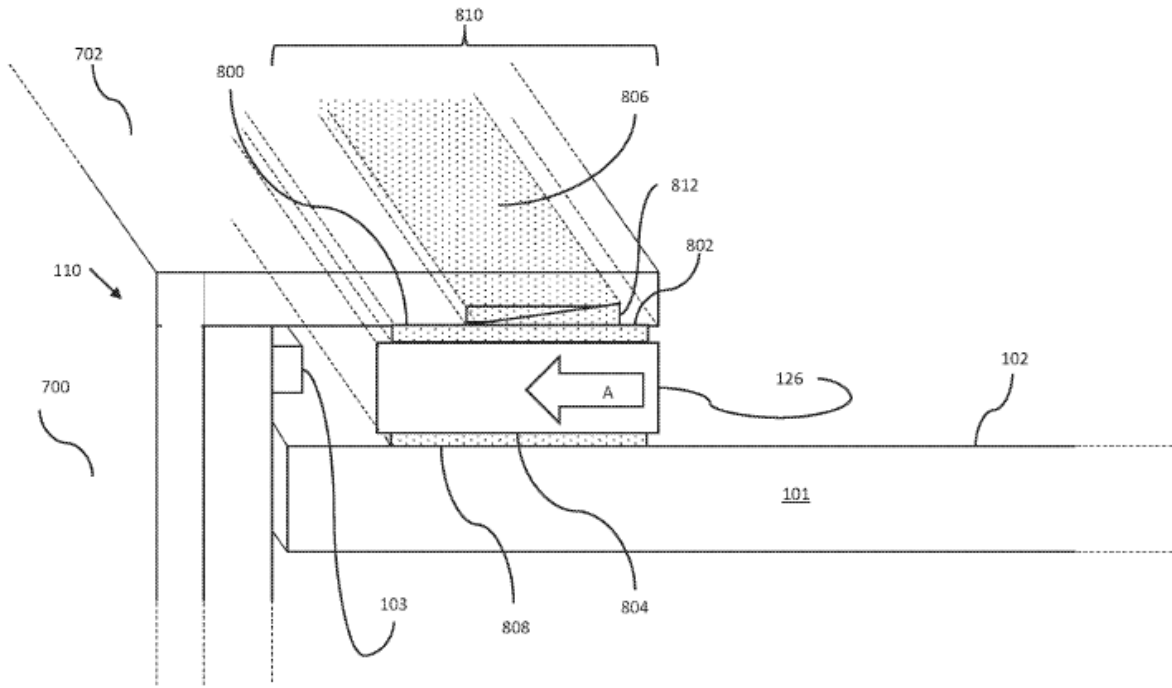


Figure 8

Id. at Fig. 8; 15:59-62. The sealing window 126 is shown slid into position between the carrier 110 and the light transmissive panel 101. *Id.* at 15:62-63. Figure 8 above additionally shows the direction A in which the sealing window 126 is moved with respect to the carrier 110 and the light transmissive panel 101, and how the sealing window 126 is slid in a direction parallel with the plane of the light transmissive panel 101. *Id.* at 15:63-16:1. The sealing window 126 may also be inserted into the carrier 110 in a different direction such as parallel to the normal axis 107 and perpendicular to the touch surface 102. *Id.* at 16:1-16:4.

These particular arrangements of the components achieve optical alignment with respect to the emitters and detectors, achieve an accurate positioning of the

substrate, and consequently the emitters and detectors, provide a seal that protects the emitters, detector and edges of the panel, and provides for facilitated and less costly mass production of the claimed touch sensing apparatus.

B. Relevant '338 Patent Prosecution History

The prosecution of the application that led to the '338 Patent contained one rejection followed by an allowance. Ex. 1002 ('338 Patent Prosecution History) at 596, 14. In response, Applicant provided an Information Disclosure Statement (IDS) citing various references that were cited as prior art in a related district court litigation brought by Promethean, Inc. ("Promethean"). Ex. 1002 at 108.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	16/989292
	Filing Date	August 10, 2020
	First Named Inventor	Daniel Skagmo
	Art Unit	2694
(Multiple sheets used when necessary)	Examiner	Giesy, Adam
SHEET 2 OF 5	Attorney Docket No.	FFOG.054C6

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FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No.	Foreign Patent Document Country Code-Number-Kind Code Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T ¹
	18	CN 203720812 U	07-16-2014	CHEN YUNHUA; LI RUILIANG		
	19	CN 203786708 U	08-20-2014	GUANGZHOU SHIRUI ELECTRICAL TECHNOLOGY CO., LTD.		
	20	CN 203825586 U	09-10-2014	SHENZHEN TIMELINK TECHNOLOGY CO., LTD		
	21	CN204288179U	04-22-2015	BEIJING DONVIEW EDUCATION & TECHNOLOGY CO., LTD.		
	22	DE 10025175 A1	12-06-2001	FRIENDLYWAY AKTIENGESELLSCHAFT FÜR ANWENDERFREUNDLICHE SYSTEME		
	23	DE 102009003990 A1	07-08-2010	WINCOR NIXDORF INTERNATIONAL GMBH		
	24	JP2015158831A	02-07-2018	TAKEUCHI YOSHIFUMI; YANO HISAAKI		
	25	KR 101081586B1	11-08-2011	SAMSUNG ELECTRO-MECHANICS CO., LTD.		
	26	KR 20150125374A	11-09-2015	LG ELECTRONICS INC.		
	27	TW M517370U	02-11-2016	TEKQ TECHNOLOGY CO., LTD.		
	28	WO 2014/098742	06-26-2014	FLATFROG LABORATORIES AB		
	29	WO 2014/130515	08-28-2014	CORNING INC		
	30	WO 2017/099657	06-15-2017	FLATFROG LABORATORIES AB		

Id. The IDS also listed Promethean's Invalidity Contentions including the Claim Charts against patents related to the '338 Patent, including against its parent U.S. Patent No. 10,739,916 (the '916 Patent), as shown below:

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ¹
	31	Defendants' Initial Invalidity Contentions, FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.	

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49	Exhibit 8: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Prior Public Use and/or Commercial Offer for Sale of Defendant Promethean Inc.'s ActivPanel 4.5 Product, FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.
50	Exhibit 9: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Chinese Utility Model No. CN 203786707 U to Chen et al., FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.
51	Exhibit 10: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on International App. Pub. No. WO2014131221 to Chen et al., FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.
52	Exhibit 11: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Chinese Pub. App. No. 104391611 A to Hu et al., FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.
53	Exhibit 12: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Chinese Utility Model No. 203786708 U to Cao, FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.
54	Exhibit 13: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Chinese Utility Model No. 204288179 U to Mo et al., FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.

Id. at 109-10.

On Allowance, the Examiner listed the references provided by Applicant stating that all references, **including Chen-812**, have been considered.

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No.	Foreign Patent Document Country Code-Number-Kind Code Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T ¹
	18	CN 203720812 U	07-16-2014	CHEN YUNHUA; LI RUILIANG		

Examiner Signature	/ADAM R. GIESY/	Date Considered	09/29/2021
*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with text communication to applicant.			

T¹ - Place a check mark in this area when an English language Translation is attached.

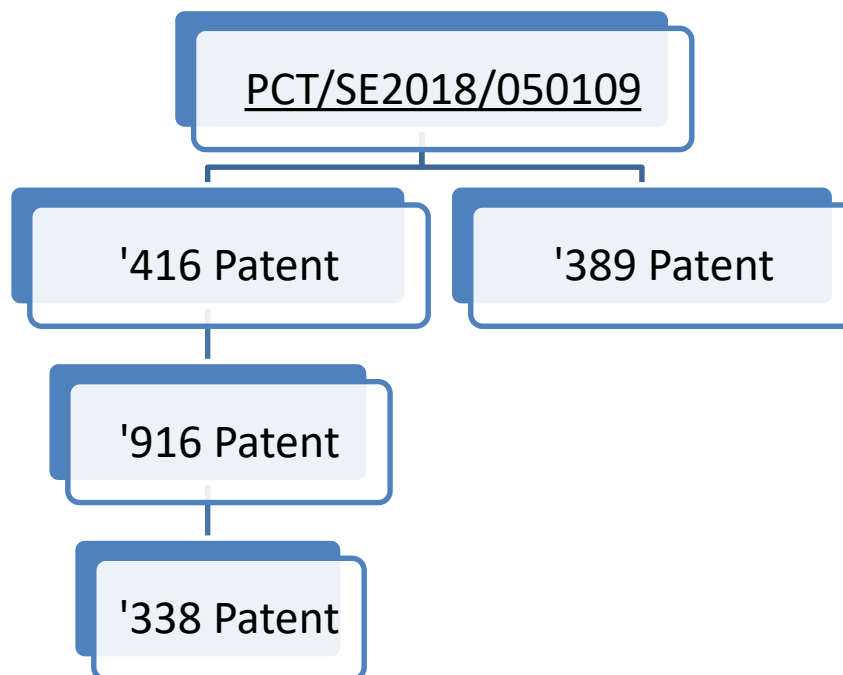
ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.R.G./

Id. at 89.

As noted above, the '338 Patent prosecution contained one rejection. The Examiner rejected the sole independent claim “on the ground of nonstatutory double patenting as being unpatentable over claims of the U.S. Patent Nos. 10739916, 10606416, and 10437389.” *Id.* at 596. The Examiner argued that the '338 Patent

claims were not “patentably distinct” from the claim(s) of the cited references—U.S. Patent No. 10,739,916 (the '916 Patent), U.S. Patent No. 10,606,416 (the '416 Patent), and U.S. Patent No. 10,437,389 (the '389 Patent). *Id.* at 595-96.

The similarities of the claimed invention is due to the fact that all patents are in the same family, and both the '916 Patent and the '416 Patent are parents of the '338 Patent. Notably, all three patents contain an identical specification and identical drawings. The family tree is as follows:



See Ex. 1001 ('338 Patent) at 1-2.

- The '338 Patent application is a continuation of the '916 Patent appl; and
- The '916 Patent application is a continuation of the '416 Patent appl.

Id.

Applicant submitted a terminal disclaimer over the referenced patents. Ex. 1002 ('338 Prosecution History) at 585, 116. In response, the Examiner issued a Notice of Allowance over the prior art of record. *Id.* at 14, 22.

On allowance, the Examiner noted that even the closest art, WO2014131221 (Weishan), did not disclose the claimed touch sensing apparatus including a “second portion extending over an edge portion of the top surface of the panel; **and a sealing element** configured to rest on the edge portion of the top surface and further configured to be **fitted between the edge portion of the top surface and the second portion of the support structure.**” *Id.* at 23 (emphasis added). Specifically:

The closest prior art by Weishan (WO2014131221) discloses a touch sensing apparatus comprising a display and a plurality of emitters wherein the emitters transmit light in a plane extending over the touch surface. Weishan does not disclose a touch sensing apparatus comprising: a panel comprising a top surface that includes a touch surface, a back surface, and an edge surface; a plurality of light emitters arranged along a periphery of the panel; a substrate configured to support at least one of the plurality of light emitters such that the at least one of the plurality of light emitters transmits a portion of light in a plane extending over the touch surface; a support structure configured to support the substrate, the support structure comprising: a first portion extending substantially parallel to the edge surface, wherein the substrate is configured to be supported by the first portion; *a second portion extending over an edge portion of the top surface of the panel; and a sealing element configured to rest on the edge portion of the top surface and further configured to be fitted between the edge portion of the top surface and the second portion of the support structure.*

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Id. at 23; *see also* Ex. 2005, (WO2014131221 (Weishan) and accompanying Google Patents English Translation). The Examiner also explicitly considered Exhibit 10—an invalidity Claim Chart provided by Applicant that relies on Weishan.

49	Exhibit 8: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Prior Public Use and/or Commercial Offer for Sale of Defendant Promethean Inc.'s ActivPanel 4.5 Product, FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.
50	Exhibit 9: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Chinese Utility Model No. CN 203786707 U to Chen et al., FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.
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53	Exhibit 12: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Chinese Utility Model No. 203786708 U to Cao, FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.
54	Exhibit 13: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Chinese Utility Model No. 204288179 U to Mo et al., FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.

Examiner Signature	/ADAM R. GIESY/	Date Considered	09/29/2021
*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

T¹ - Place a check mark in this area when an English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.R.G./

Id. at 91 (showing Exhibit 10 Claim Chart relying on WO 2014131221 (Chen), which is the Weishan reference).

In order to reach allowance, the Examiner suggested amending the claims in order to overcome Weishan, as shown below:

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<i>Examiner-Initiated Interview Summary</i>	Application No. 16/989,292	Applicant(s) Skagmo et al.		
	Examiner ADAM R GIESY	Art Unit 2694	AIA (First Inventor to File) Status Yes	Page 1 of 1

All Participants (applicant, applicants representative, PTO personnel)	Title	Type
ADAM R GIESY	Primary Examiner	Telephonic
Arpita Bhattacharyya	Attorney of Record	
Unnat Bhansali	Agent	

Date of Interview: 16 November 2021

Issues Discussed:

Other

Examiner suggested amending around newly found prior art - Weishan (WO2014131221). Applicant submitted proposed claim amendments (attached). Examiner agrees that the proposed claim amendments overcome the newly found prior art. Examiner agreed to enter the proposed claim amendments via Examiner's Amendment.

☒ Attachment

Id. at 25 (emphasis added). The amendments contained the clarification and addition of the very “sealing element” limitation that Petitioner attempts to overcome with Klein.

Proposed Claim Amendments

(For discussion purposes only)

1-5. (Canceled).

6. (Currently Amended) A touch sensing apparatus comprising:
- a panel comprising a top surface that includes a touch surface, a back surface, and an edge surface;
 - a plurality of light emitters ~~and detectors~~ arranged along a ~~perimeter~~ periphery of the panel;
 - a substrate configured to support at least one of the plurality of light emitters such that the at least one of the plurality of light emitters transmits a portion of light in a plane extending over the touch surface, ~~wherein an emitter is mounted on the substrate and is configured to transmit light in a plane above the touch surface and perpendicular to a normal of the touch surface~~; [[and]]
 - a support structure configured to support the substrate;
 - ~~wherein, the support structure is formed from a single monolithic piece comprising:~~
 - a first portion extending substantially parallel to the edge surface, wherein the substrate is configured to be supported by the first portion ~~and above and below the touch surface~~; [[and]]
 - a second portion extending over an edge portion of the top surface of the panel; ~~and parallel to the touch surface to overlap with at least a portion of the touch surface~~
 - a sealing element configured to rest on the edge portion of the top surface and further configured to be fitted between the edge portion of the top surface and the second portion of the support structure.

Id. at 85 (emphasis added) (claim 6 is now Independent Claim 1). Moreover, the prior claimed “optical element” was changed to the “sealing element” now claimed, as shown below:

14. (Currently Amended) The touch sensing apparatus according to claim 6, ~~comprising an optical element configured to be secured between the touch surface and the second portion of the support structure, wherein the sealing~~ optical element comprises a first surface facing the emitter at least one of the plurality of light emitters and being configured to receive the transmitted light from ~~[[the]]~~ that emitter and a second surface configured to receive light propagating ~~across~~ in the plane extending over a touch-interacting portion of the touch surface.

Id. at 86 (emphasis added).

a. The Parent '916 Patent Prosecution History

During prosecution of the application that led to the '916 Patent, the parent of the '338 Patent, there was one office action and related response. See Ex. 2002 ('916 Patent Prosecution History) at 215, 246. The response by the Applicant requested an examiner interview, which took place shortly thereafter. *Id.* The Examiner's Interview Agenda cited the following references, which were discussed with the Examiner just prior to allowance:

- The '338 Patent Figure 8;
- US 20140210793 ("Eriksson");
- US 2015/0131010 ("Sugiyama");
- US 4751379 ("Sasaki");
- ***Publication No. WO2013159472 (PCT/CN2012/080153) (Chen-WO);***
- US 2013/023499 (Sparf).

Id. at 251-253.

All references above were filed on the record and provided to the Examiner, ***including Foreign Reference Chen-WO. See id.*** at 256, 371-92. The references were discussed during examiner interviews that took place on June 11, 2020, and June 22, 2020. ***Id. Chen-WO is a parent Application No. PCT/CN2012/080153 having Publication No. WO2013159472 (Chen-WO), which contains the same disclosures in its specification and drawings as its related child patent Chen-975, relied on by Petitioner in this IPR.***

In particular, the identification of cited art discussed included the Chen-WO reference, and all others above, as shown below:

Attendees, Date and Type of Interview

The interview was conducted via phone on June 11 and June 22 and attended by Harnik Shukla.

Identification of Claims Discussed

6

Identification of Cited/Disclosed Art Discussed

US 20140210793 (Eriksson); US 2015/0131010 Sugiyama; US 4751379 to Sasaki; **WO2013159472**; US 2013/023499 (Sparf).

Principal Arguments and Other Matters

Mr. Shukla discussed the proposed amendments in view of the cited art and references stated above.

Results of Interview

The Examiner agreed that the proposed amendments are allowable.

Id. at 1234-35 (emphasis added). The below figures of each reference cited were specifically discussed during the interview:

FOR INTERVIEW PURPOSES ONLY - PLEASE DO NOT ENTER

Present Application

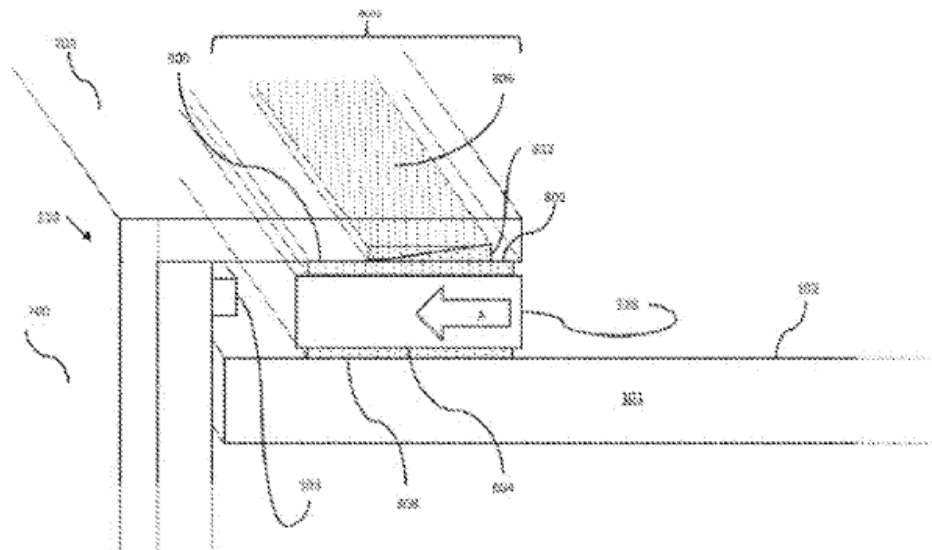


FIG. 8

Cited Art

US 20140210793 (Eriksson)

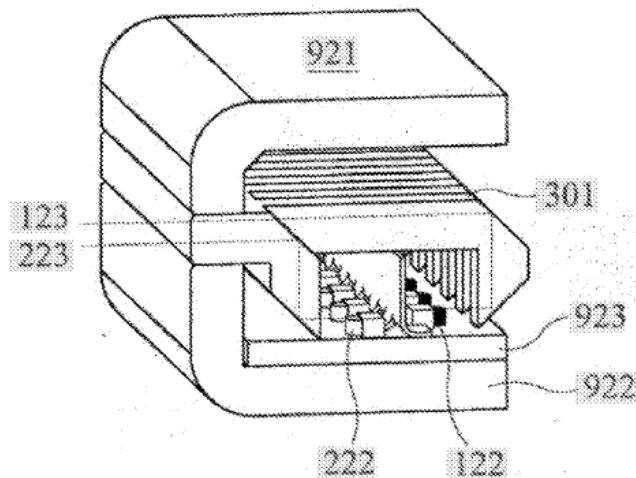
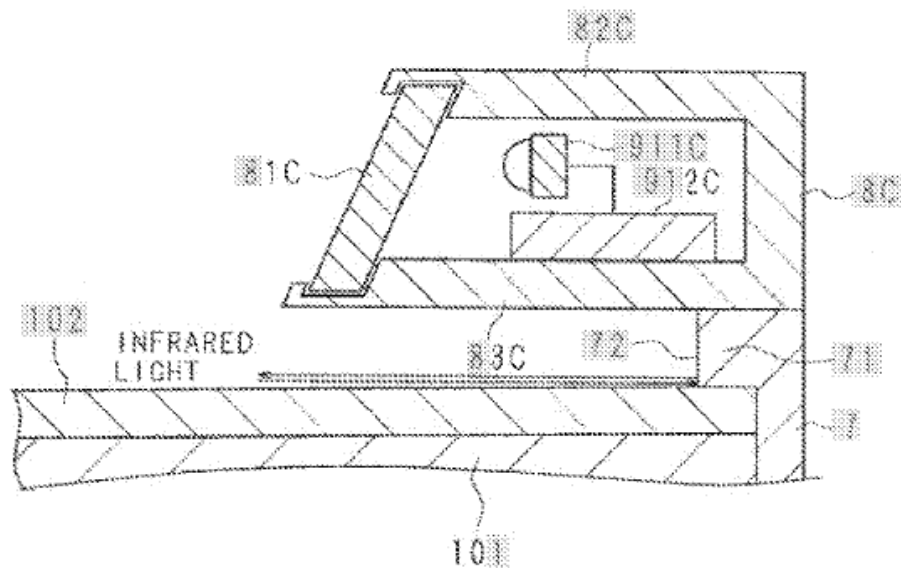


FIG. 7

US 2015/0131010 Sugiyama

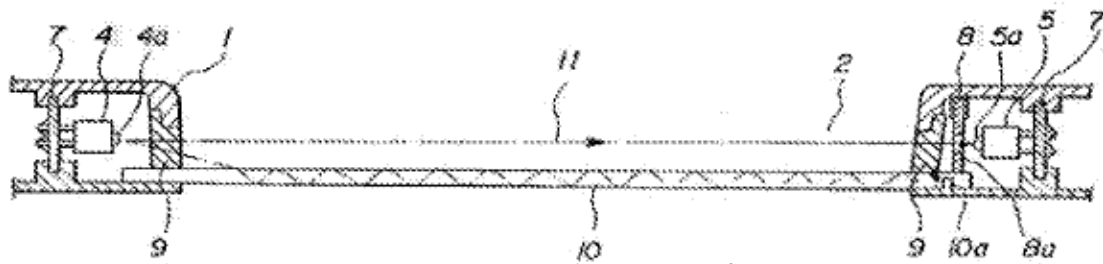
FIG. 14



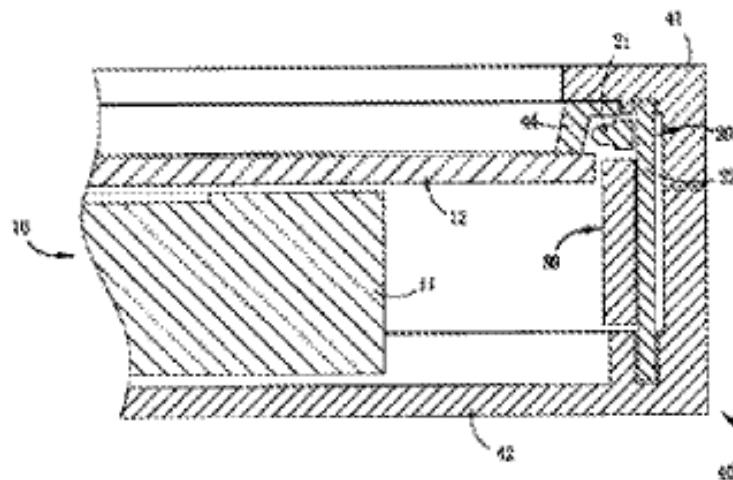
Additional Art from Litigation

US 4751379 to Sasaki

FIG. 2



WO2013159472



【図号】 図 2

US 2013/023499 (Sparf)

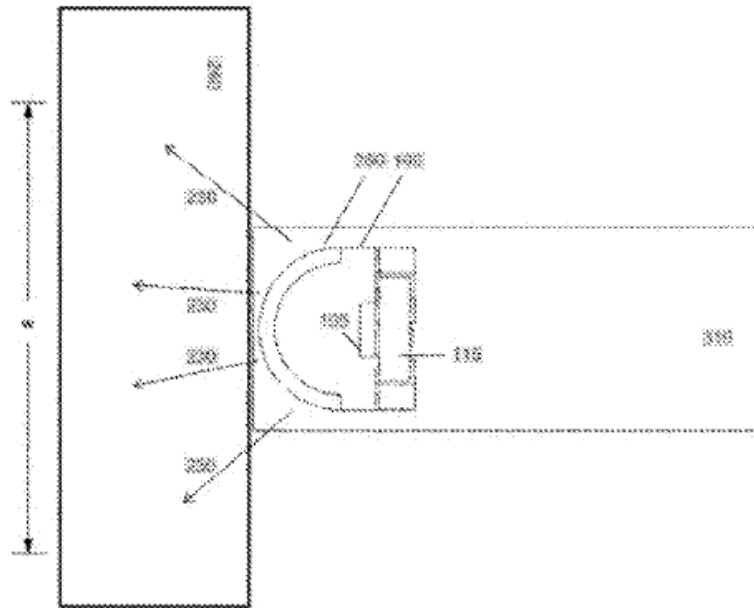


FIG. 4

Id. at 1234-35 (emphasis added).

A Notice of Allowance issued shortly after, on June 26, 2020, allowing all claims. *Id.* at 1158. Alongside the Allowance, the Examiner provided a listing of references expressly considered and containing a notation to the references discussed during the interview, ***including Chen-WO***, as shown below:

Case IPR2024-00013
Patent No. 11,281,338
Patent Owner's Preliminary Response

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number <i>Number - Kind Code (if known)</i> Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1	2015/0373864 A1	12-24-2015	Jung	
	2	2013/0321740 A1	12-5-2013	An et al.	
	3	2016/0154533 A1	06-02-2016	Eriksson et al.	
	4	2011/0080361 A1	04-07-2011	Miller et al.	
	5	2019/0235701 A1	08-01-2019	Han et al.	
	6	9,024,896 B2	05-05-2015	Chen	
	7	4,751,379	06-14-1988	Sasaki et al.	
	8	2013/0234991 A1	09-12-2013	Sparf	

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No.	Foreign Patent Document <i>Country Code-Number-Kind Code</i> Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T ¹
	9	WO 2014/065601	05-01-2014	LG Electronics Inc.		
	10	WO 2018/106176	06-14-2018	FlatFrog Laboratories AB		
	11	EP 3535640 A1	09-11-2019	FlatFrog Laboratories AB		
	12	EP 2765622 A2	08-13-2014	LG Electronics Inc.		
	13	WO 2013/159472	10-31-2013	Shenzhen Timelink Technology Co., LTD.		X

Examiner Signature	/ADAM R. GIESY/	Date Considered	06/22/2020
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***Examiner:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T¹ - Place a check mark in this area when an English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.R.G./

Id. at 1229. The Examiner also noted that an English language translation of the Chen-WO reference was attached by Applicant, and provided to the Examiner. *Id.*; *see also id.* at 387-392 (Chen-WO English Machine Translation by Google Patents).

C. Summary of Petitioner’s Proposed Grounds of Unpatentability and the References Cited

Petitioner contends that claims 1-15 would have been obvious under pre-AIA 35 U.S.C. § 103. The Petition raises these grounds of alleged obviousness based on the following references:

1. Chinese Patent No. 202661975 (“Chen-975”);
2. U.S. Patent No. 8,330,736 (“Klein”);
3. U.S. Patent Publication No. 2014/0111706 (“Nakamura”);
4. Chinese Patent No. 203720812 (“Chen-812”);
5. U.S. Patent Publication No. 2012/0146950 (“Park”).

The Petition asserts the following grounds of alleged invalidity under 35 U.S.C. § 103:

Ground	’338 Patent Claim(s)	Primary Reference	Secondary Reference(s)
1A	1-3, 5-7, 9-15	Chen-975	Klein
1B	4-5	Chen-975	Klein and Nakamura
2	1, 2, 5-6, 8-9, 11-15	Chen-812	-
3	1, 2, 5-7, 10-15	Park	Klein

Petitioner relies on primary references Chen-975 (Grounds 1A and 1B), Chen-812 (Ground 2), and Park (Ground 3) for allegedly teachings a touch screen device

with a substrate and support structure configured to support the substrate. In combination, Petitioner relies on Klein (Grounds 1A, 1B, and 3) for allegedly teaching the claimed “sealing element” limitation.

III. DISCRETIONARY FACTORS FAVOR DENIAL OF INSTITUTION

The Petition should be denied pursuant to 35 U.S.C. § 325(d). Employing a framework that “reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown,” the Director will discretionarily deny institution when: (1) “the same or substantially the same art previously was presented to the Office or whether the same” **or** “the same arguments previously were presented to the Office”; and (2) the petitioner does not “demonstrate[] that the Office erred in a manner material to the patentability of challenged claims.” *Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GMBH*, IPR2019-01469, Paper 6, 8 (PTAB Feb. 13, 2020) (precedential) (“*Advanced Bionics*”)

Within this two-part framework, the Board considers a number of non-exclusive factors in evaluating whether to exercise its discretion under § 325(d). *See Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first para.) (“*Becton*,

Dickinson"); *see also Advanced Bionics* at 9–11. The factors set forth in *Becton, Dickinson* are as follows:

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
- (d) the extent of the overlap between the arguments made during examination and the manner in which petitioner relies on the prior art;
- (e) whether petitioner has pointed out sufficiently how the examiner erred in its evaluation of the asserted prior art; and
- (f) the extent to which additional evidence and facts presented in the petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson at 17–18.

For Part 1 of the *Advanced Bionics* framework, the Board first evaluates *Becton, Dickinson* factors (a), (b), and (d). *Advanced Bionics* at 10. If it is determined that the same or substantially the same art or arguments were previously presented to the USPTO, then under Part 2 Board considers factors (c), (e), and (f) to assess “whether the petitioner has demonstrated a material error by the Office” in its prior consideration of that art or arguments. *Id.*

A. 35 U.S.C § 325(d) Weighs in Favor of Denying Institution

The Petition should be denied pursuant to 35 U.S.C. § 325(d) because (1) the disclosures of the Petition's primary reference for Grounds 1A and 1B (Chen-975) **are identical** to those in Chen-WO, which was specifically relied on by the Office during an office action and on allowance; (2) the Petition's primary reference for Ground 2 (Chen-812) was specifically considered by the Office prior to allowance; and (3) because the obviousness arguments made for all Grounds are substantially the same of those already considered during examination. *See Advanced Bionics*, IPR2019-01469, Paper 6, 8 (PTAB Feb. 3, 2020) (precedential). As such, Part 1 is clearly met and Petitioner fails to even address Part 2.

More specifically, the Petition relies on Chen-975 as a primary reference for both Grounds 1A and 1B. Yet, as discussed below, the disclosures of Chen-975 (i.e., the specification and drawings of Chen-WO) were already considered by the Office during the prosecution of the '338 Patent's parent including to reject claims having limitations now challenged by the Petition. In addition, the Petition relies on Chen-812 as the sole reference for Ground 2. Yet, as also discussed below, Chen-812 was specifically cited in an IDS and expressly considered by the Examiner during allowance. **Additionally**, the Petition merely rehashes substantially the same arguments previously rejected by the Examiner—that is, relying on the teachings of

frames having optical filters and openings or grooves as taught by Klein to meet the “sealing element” limitation of the '338 Patent claims.

Petitioner's claims regarding the Office's prior consideration of Chen-975 and Chen-812 are contradicted by the clear record. *See* Pet. at 54. As discussed in Section II.B, Chen-812 was specifically cited on Information Disclosure Statements and expressly considered by the Examiner prior to allowance. *See supra*. Additionally, Petitioner's obviousness arguments are substantially the same as those that the Applicant already overcame during prosecution. *Id.* Petitioner fails to even attempt to address how the Office materially erred in its prior consideration of Chen-812 and Chen-975/Chen-WO, or in its obviousness arguments. In fact, the Petition contains only perfunctory arguments against the Board exercising its discretion under § 325(d), and relies upon pre-*Advanced Bionics* authority. Pet. at 54.

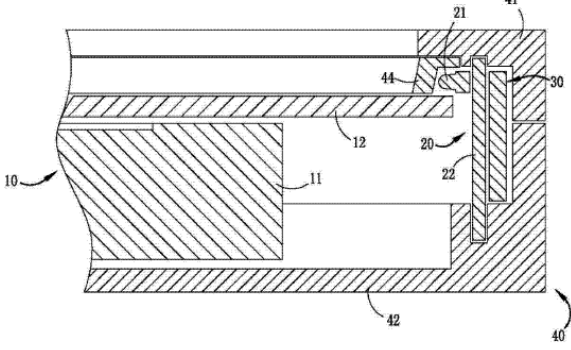
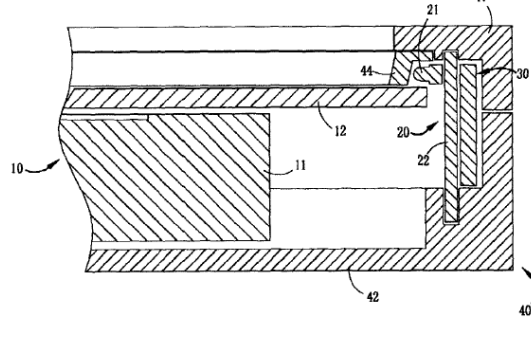
As shown by the overwhelming evidence contained in the prosecution history, the Petition is a rehash of the art, rejections, arguments, and reasons for allowance already considered during the prosecution of the '338 Patent and its parent (the '916 Patent), making this Petition ripe for denial of institution under § 325(d).

1. *Part 1: The Same And/Or Substantially The Same Art/Arguments Were Previously Presented To The Office*

a. Petitioner's Key Reference for Grounds 1A and 1B (Chen-975) Was Previously Considered By The Office

First, as shown in Section II.B above, the Petition relies on Chen-975 as a primary reference for both Grounds 1A and 1B. Yet, the disclosures of Chen-975 (its specification and drawings) are identical to those of Chen-WO, a reference already considered by the Office to reject the parent '916 Patent claims, which were then later allowed after further interview discussions with the Applicant.

The Chen-975 Patent disclosures (i.e., its specification and drawings) cited by Petitioner are the same as those found in its related parent application, Application No. PCT/CN2012/080153 having Publication No. WO2013159472 (Chen-WO). Petitioner fails to acknowledge this fact. The disclosures of Chen-975 relied on by Petitioner and their matching disclosures found in Chen-WO, are shown below:

Chen-975 (Exs. 1004, 1005) (Petition) (Petitioner translation of Chen-975)	Chen-WO ('916 Pros. Hist., 371-92) (Google translation of Chen-WO)
 图 3 Fig. 3. (Relied by Petitioner) (Pet., 13-14).	 【图号】图3 Fig. 3. (Relied by Examiner) ('916 PH, 253).
[0008] An objective of the present utility model is to provide a touch display device, which is a product with the same character as a conventional touch display apparatus. The main technical problem that it seeks to solve is as follows: Conventional touch display apparatuses are limited by the width of printed circuit boards used to connect sensing signal transmitters and sensing signal receivers, so outer frames of corresponding width need to be made; as a result, the outer frames generally all need to be twenty-odd millimeters wide, so it is difficult to realize touch technology by using sensing signal transmission/reception on many ultra-thin, ultra-narrow displays. The above is the main technical problem to be solved by the present utility model. (Chen-975) (Relied by Pet. at 13-14).	[0006] An object of the present invention is to provide a touch display device, which is a product of the same nature as a conventional touch display device, and the main technical problem to be solved is that the conventional touch display device is limited to The width of the printed circuit board used to connect the inductive signal transmitting tube and the inductive signal receiving tube requires the outer frame of the corresponding width, so that the outer frame generally needs to be twenty millimeters wide, thus causing many ultra-thin, ultra-narrow displays. It is difficult to implement touch technology by using an inductive signal transceiving method. The above is the main technical problem to be solved by the present invention. (Chen-WO Disclosure) ('916 PH, 388)

[0027] The sensing signal transceiver module 20 comprises sensing signal transmitter/receiver pairs 21 and a printed circuit board 22; the sensing signal transmitter/receiver pairs 21 are all electrically connected to the printed circuit board 22, each sensing signal transmitter/receiver pair 21 comprising a sensing signal transmitter and a sensing signal receiver.	[0022] . . .The sensing signal transceiver module 20 includes a plurality of sensing signal transceiver tubes 21 and a printed circuit board 22, and a plurality of the sensing signal transceiver tubes 21 are electrically connected to the printed circuit board 22, and the sensing signal transceiver tube 21 is Including an inductive signal transmitting tube and an inductive signal receiving tube;
[0028] The printed circuit board 22 is annularly disposed around the liquid crystal display 11, and the printed circuit board 22 is perpendicular to a panel of the liquid crystal display 11.	The printed circuit board 22 is disposed around the liquid crystal display 11, and the printed circuit board 22 is perpendicular to the panel of the liquid crystal display 11;
[0029] The sensing signal transmitter/receiver pairs 21 electrically connected to the printed circuit board 22 are disposed at a front side of a display face of the liquid crystal display 11, and the sensing signal transmitters and the sensing signal receivers are correspondingly disposed at left and right sides and top and bottom sides of the liquid crystal display 11 respectively; sensing signals transmitted by the sensing signal transmitters form a sensing signal detection network at the front side of the display face of the liquid crystal display 11.	An inductive signal transceiving pair 21 electrically connected to the printed circuit board 22 is disposed on a front side of the display of the liquid crystal display 11, and the sensing signal transmitting tube and the sensing signal receiving tube respectively are disposed at a position The sensing signals emitted by the plurality of sensing signal tubes form an inductive signal detecting network on the display side of the liquid crystal display 11 on the left and right sides and the upper and lower sides of the liquid crystal display 11;
[0030] The control module 30 is electrically connected to the printed circuit board 22; the control module 30	The control module 30 is electrically connected to the printed circuit board 22, and the control module 30 controls

controls the operation of the liquid crystal display 11 and the sensing signal transmitter/receiver pairs 21. (Chen-975) (Relied by Pet. at 14).	the operation of the liquid crystal display 11 and the sensing signal transceiver pair 21; (Chen-WO Disclosure) ('916 PH, 389)
[0039] Preferred embodiments: As shown in Figs. 1, 2, 3 and 4, a light filter strip 44 is provided in the light exit gap 43 between the top casing 41 and the liquid crystal display 11, the light filter strip 44 being located at a front side of the infrared transmitter and infrared receiver of the infrared transmitter/receiver pair; the light filter strip 44 is used to filter out external light rays, so that the infrared transmitter and infrared receiver can selectively transmit and receive light. [0040] Preferred embodiments: As shown in Figs. 1, 2, 3 and 4, the flat panel display component 10 further comprises a touch panel 12, the touch panel 12 covering one side of the display face of the liquid crystal display 11, and the touch panel 12 being made of transparent tempered glass plate; the liquid crystal display 11 located at the display window 411 is protected against 10 external forces by means of the touch panel 12 made of transparent tempered glass plate. (Chen-975) (Relied by Pet. at 14-15).	[0031] Preferred embodiment: As shown in FIG. 1, 2, 3, and 4, a filter strip 44 is disposed in the light exit gap 43 between the face shell 41 and the liquid crystal display 11, and the filter strip is disposed. 44 is located on the front side of the infrared transmitting tube and the infrared receiving tube of the infrared transceiver tube, and uses the filter strip 44 to filter out external light, so that the infrared emitting tube and the infrared receiving tube can selectively send and receive externally Light. [0032] Preferred embodiment: As shown in FIG. 1, 2, 3, and 4, the flat panel display unit 10 further includes a touch panel 12, and the touch panel 12 is disposed on a display surface side of the liquid crystal display 11. The touch panel 12 is made of a transparent tempered glass plate, and the touch panel 2 made of a transparent tempered glass plate provides protection against external force to the liquid crystal display 11 located at the display window 411. (Chen-WO Disclosure) ('916 PH, 390)

In summary, as shown above, other than minor differences in translation, Chen-975 is identical to Chen-WO. As discussed above, Chen-WO was previously considered by the Office and distinguished from the claimed invention. *See* Ex. 2002 ('916 Patent Prosecution History), 253, 1234-35. Yet, the Petition fails to even mention this.

Moreover, the '338 Patent is a continuation of the parent patent application, which led to the '916 Patent. *See supra* Section II.B; Ex. 1001 ('338 Patent) at 1-2. And not only are the specification and drawings of the '916 Patent and the '338 Patent materially identical, as further shown below, the claim limitations of their independent claims are also highly similar. *See supra* Section II.B. Thus, the prosecution history of the '916 Patent is to be considered “with equal force” as the prosecution history of the '338 Patent itself. *See Elkay Mfg. Co. v. Ebco Mfg. Co.*, 192 F.3d 973, 980 (Fed. Cir. 1999) (“When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation.”); *Nokia of America Corp. v. Alexander Soto and Walter Soto*, IPR2023-00681, Paper 10, 20 (PTAB Nov. 3, 2023) (finding the parent prosecution history to apply in equal force to evaluate part 1); *II-VI, Inc. v. Alexander Soto*, IPR2021-01359, Paper 10 at 19–20 (PTAB Feb. 15, 2022) (evaluating Patent

Owner's comparison of claim 1 of the '723 patent with claim 1 of the '795 patent and finding that "it supports Patent Owner's position that the prosecution history of the ['795] patent is appropriately considered in evaluating whether to exercise discretion to deny the Petition"); *Cultec, Inc. v. StormTech LLC*, IPR2017-00777, Paper 7 at 9, 11 (PTAB Aug. 22, 2017).

For example, as shown below, limitations of independent claim 1 of the '916 Patent and independent claim 1 the '338 Patent are either identical or substantially the same. In fact, Claim 1 of the '338 Patent contains additional limitations that would further differentiate it from Chen-975 and other cited prior art:

'916 Patent (Independent Claim 1)	'338 Patent (Independent Claim 1)
1. A touch sensing apparatus, comprising:	1. A touch sensing apparatus comprising:
a panel that defines a touch surface;	a panel comprising a top surface that includes a touch surface, a back surface, and an edge surface;
a plurality of light emitters and detectors arranged along a perimeter of the panel;	a plurality of light emitters arranged along a periphery of the panel;
-	a substrate configured to support at least one of the plurality of light emitters such that the at least one of the plurality of light emitters transmits a portion of light in a plane extending over the touch surface;
a support structure comprising	a support structure configured to support the substrate, the support structure comprising:

a first portion that is parallel to the touch surface and separated by a space from the panel, said first portion including a first projection extending downwards from said first portion and	a first portion extending substantially parallel to the edge surface , wherein the substrate is configured to be supported by the first portion;
a second projection extending downwards from said first portion , wherein a gap between the first projection and the second projection forms a receptacle having a first cross-sectional shape; and	a second portion extending over an edge portion of the top surface of the panel; and
an optical element fitted in the space between the panel and the first portion and configured to seal the plurality of light emitters from contaminants from the touch surface, said optical element comprises a mating portion having a second cross-section shape that is substantially reciprocal to the first cross-sectional shape, said mating portion engaged with the receptacle of the first portion.	a sealing element configured to rest on the edge portion of the top surface and further configured to be fitted between the edge portion of the top surface and the second portion of the support structure.

Compare Ex. 1001 ('338 Patent) *with* Ex. 2001 ('916 Patent) (emphasis added).

These similarities are further supported by the fact that the Examiner rejected the independent claim of the '338 Patent as not “patentably distinct” from the '916 Patent. Ex. 1002 at 595; *supra* Section II.B.

Moreover, on allowing the claims of the '338 Patent, the Examiner particularly noted that no prior art of record disclosed the claimed touch sensing apparatus including a “second portion extending over an edge portion of the top surface of the panel; **and a sealing element** configured to rest on the edge portion

of the top surface and further configured to be **fitted between the edge portion of the top surface and the second portion of the support structure.**" Ex. 1002 at 23 (emphasis added). And as shown above, this limitation is similarly in the '916 Patent claims, which the Examiner allowed over Chen-975/Chen-WO.

In summary, the disclosures of Chen-975 that Petitioner relies on in Grounds 1A and 1B mirror those that the Office relied on during a rejection of the '916 Patent and discussed during an examiner review, and the application was allowed in light of Applicant's arguments. Thus, the Board should defer to the previous Office determinations and decline to revisit the disclosures of Chen-975 (Chen-WO). This is enough on its own to meet Part 1 under *Advanced Bionics*.

b. Petitioner's Primary Reference for Ground 2 (Chen-812)
Was Previously Presented To The Office

As discussed in Section II.B above, Chen-812 was specifically cited in an IDS and expressly considered by the Examiner during allowance. "Previously presented art includes art made of record by the Examiner, and art provided to the Office by an applicant, such as on an Information Disclosure Statement (IDS), in the prosecution history of the challenged patent." *Advanced Bionics*, Paper 8 at 7-8. Further, the Board has construed "previously presented" in 35 U.S.C. § 325(d) to refer to art and arguments presented to the Office *prior to* the filing of the petition

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Patent Owner's Preliminary Response

at issue. *Ironsource Ltd. v. Digital Turbine Inc.*, PGR2021- 00096, Paper 14 at 52 (PTAB Jan. 6, 2022).

Chen-812 is the sole reference relied on by Petitioner in Ground 2 for its alleged “disclosure similar to that of the ’338 Patent [that] would have rendered obvious many of its claims.” Pet. at 53 (citing Chen-812, Fig. 1). Meaning, under Ground 2, Petitioner relies on Chen-812 to meet all limitations of independent Claim 1 of the ’338 Patent, without citing to any other prior art.

Yet, as discussed in Section II.B, Applicant provided an IDS specifically citing Chen-812 in response to an office action made by the Examiner. Ex. 1002 (’338 Patent Prosecution History) at 108. Still, Chen-812 is now the very reference relied on by Petitioner for Ground 2. But the Examiner stated that Chen-812 was already considered after Applicant’s response and prior to allowance:

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No.	Foreign Patent Document Country Code-Number-Kind Code Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T ¹
	18	CN 203720812 U	07-16-2014	CHEN YUNHUA; LI RUILIANG		

Examiner Signature	/ADAM R. GIESY/	Date Considered	09/29/2021
*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

T¹ - Place a check mark in this area when an English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.R.G./

Id. at 89.

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Moreover, the Applicant also provided the Examiner with an IDS listing Promethean's Invalidity Contentions including the attached Claim Charts against the '916 Patent—the parent of the '338 Patent as discussed above—including Invalidity Contentions that relied on Chen-812, as shown below:

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ¹
	31	Defendants' Initial Invalidity Contentions, FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.	

	49	Exhibit 8: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Prior Public Use and/or Commercial Offer for Sale of Defendant Promethean Inc.'s ActivPanel 4.5 Product, FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.	
	50	Exhibit 9: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Chinese Utility Model No. CN 203786707 U to Chen et al., FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.	
	51	Exhibit 10: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on International App. Pub. No. WO2014131221 to Chen et al., FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.	
	52	Exhibit 11: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Chinese Pub. App. No. 104391611 A to Hu et al., FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.	
	53	Exhibit 12: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Chinese Utility Model No. 203786708 U to Cao, FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.	
	54	Exhibit 13: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Chinese Utility Model No. 204288179 U to Mo et al., FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.	

Examiner Signature	/ADAM R. GIESY/	Date Considered	09/29/2021
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*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T¹ - Place a check mark in this area when an English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.R.G./

Id. at 90-91.

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Patent No. 11,281,338
Patent Owner's Preliminary Response

a. Prior Art Patent Applications, Patents, and Utility Models

Defendants hereby identify the following prior art patent applications, patents, and utility models, copies of which are being served herewith, that anticipate and/or render obvious the '916 Asserted Claims under 35 U.S.C. §102 (post-AIA) and/or 35 U.S.C. § 103 (post-AIA):

Reference No.	Named Inventor(s)
Chinese Utility Model No. CN 203786707 U	Chen et al.
International Pub. App. No. WO 2014/131221	Chen et al.
Chinese Pub. App. No. 104391611 A	Hu et al.
Chinese Utility Model 203786708 U	Cao
Chinese Utility Model 204288179 U	Mo et al.
International App. Pub. No. WO 2017/099657	Christiansson et al.
U.S. Patent No. 5,729,250	Bishop et al.
U.S. Patent No. 4,751,379	Sasaki et al.
U.S. Pub. App. No. 2019/0004668	Jeong et al.
Chinese Utility Model 203720812 U	Chen et al.
Japanese Pub. App. No. 2015-158831A	Yano et al.
U.S. Pub. App. No. 2014/0210793	Eriksson et al.
U.S. Pub. App. No. 2015/0131010	Sugiyama et al.
U.S. patent No. 9,983,626	Cao et al.
Japanese Pub. App. No. 62-159213	Sasaki et al.
German Pub. App. No. 102009003990	Kulik et al.
German Pub. App. No. 10025175	John
Chinese Utility Model No. 202887145 U	Quan

Ex. 2003 (Promethean Invalidity Contentions), at 16.

Notably, the Claim Chart provides an Exhibit 8 to the Promethean Invalidity Contentions that was provided to the Examiner:

49	Exhibit 8: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Prior Public Use and/or Commercial Offer for Sale of Defendant Promethean Inc.'s ActivPanel 4.5 Product, FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.
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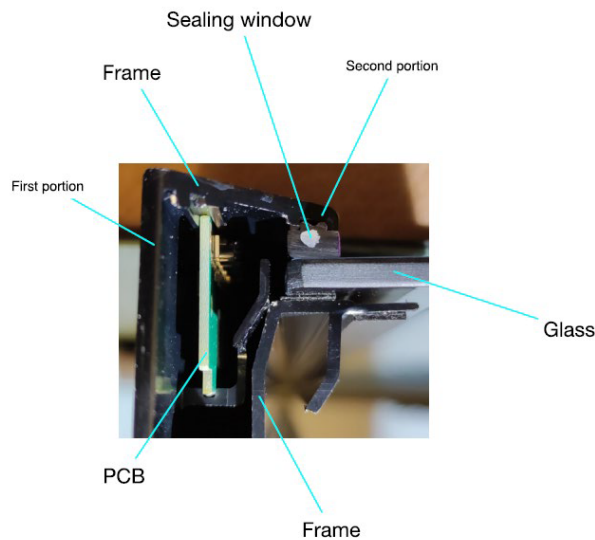
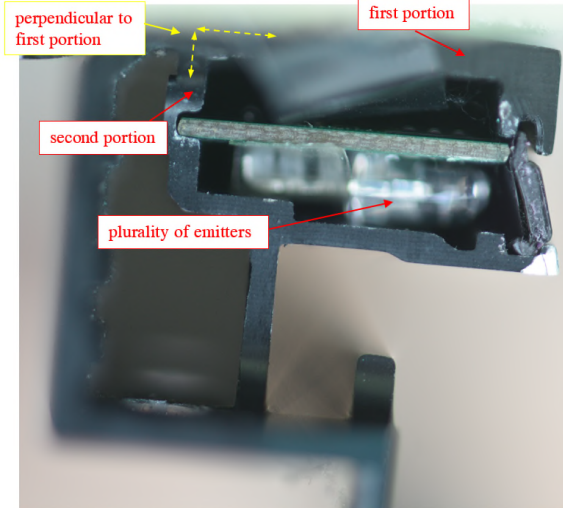
Id. at 91.

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Patent No. 11,281,338
Patent Owner's Preliminary Response

EXHIBIT 8	
Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Prior Public Use and/or Commercial Offer for Sale of Defendant Promethean Inc.'s ActivPanel 4.5 Product	
I. Introduction	
Defendants assert that, based on the scope of the claims asserted by Plaintiff in its infringement contentions, the prior public use and commercial offers for sale and sales of Defendant Promethean Inc.'s ActivPanel 4.5 product ("AP4.5") are invalidating prior art under AIA 35 U.S.C. § 102(a)(1). The AP4.5 product was on sale and/or in public use at least as early as June, 2016. As described below, the AP4.5 anticipates all Asserted Claims of U.S. Patent 10,739,916 under AIA 35 U.S.C. § 102. Although Defendants reserve the right to rely on other portions of the prior art and/or other evidence to show the invalidity of the asserted claims, the citations below are representative of where specifically in the item of prior art each element of each Asserted Claim is found. Exemplary evidence regarding knowledge of the person skilled in the art is provided in International App. Pub. No. WO 2017/099657 to Christiansson et al.; U.S. Patent No. 5,729,250 to Bishop et al.; Chinese Utility Model No. 203786707 U to Chen et al.; Chinese Pub. App. No. 104391611 A to Hu et al.; International Pub. App. No. WO 2014/131221 to Chen et al.; Chinese Utility Model 203786708 U to Cao et al.; Chinese Utility Model 204288179 U to Mo et al.; U.S. Patent No. 4,751,379 to Sasaki et al.; U.S. Pub. App. No. 2019/0004668 to Jeong et al.; Chinese Utility Model 203720812 U to Chen et al.; Japanese Pub. App. No. 2015-158831A to Yano et al.; U.S. Pub. App. No. 2014/0210793 to Eriksson et al.; and/or U.S. Pub. App. No. 2015/0131010 to Sugiyama et al. Defendants reserve the right to rely on other publications and to provide additional evidence, including expert testimony, regarding knowledge of the skilled person in this art.	

See Ex. 2004 (Exhibit 8 Claim Chart, Promethean Invalidity Contentions). *The Claim Chart contains the same arguments now made in the Petition*, including those shown below:

Petition	AP4.5 Product in view of Chen-812
Specifically, in litigation involving the '338 patent, patentee FlatFrog has interpreted claim 1 as encompassing an air gap between parts of the substrate (labeled "PCB" below) and the first portion of the support structure:	The AP4.5 product discloses that the support structure further comprises a second portion extending from the first portion, wherein the second portion is configured to enable mounting of the plurality of emitters and wherein the second portion is oriented perpendicular to the first portion.

 Pet. at 58-59 (citing Ex. 1012 at 3). “Claims 1, 2, 5, 6, 8, 9, and 11-15 of the ’338 patent would have been obvious over Chen ’812 for these reasons.” <i>Id.</i>	 Exhibit 8 Claim Chart, Promethean Invalidity Contentions at 12; <i>see also id.</i> at 2-11.
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In summary, Chen-812 has already been considered during prosecution, and the arguments made based on Chen-812 now are also the same as those already evaluated by the Office. As such, the Board need not revisit Chen-812, and should instead defer to the prior evaluations already made by the Office. This is enough on its own to meet Part 1 under *Advanced Bionics*.

c. Petitioner's Arguments Are The Same Or Substantially The Same As Those Previously Considered By The Office

Part 1 is further met because the Petition argues the “same or substantially the same art [or arguments] previously [] presented to the Office.” *Advanced Bionics*, IPR2019-01469 at Paper 8; *Nokia of America Corp. v. Alexander Soto and Walter*

Soto, IPR2023-00681, Paper 10, 23 (PTAB Nov. 3, 2023) (denying institution as obviousness arguments were substantially the same as previously evaluated by the Office). The overlap between the IPR-asserted references and those evaluated during the '338 Patent (and its parents) prosecution also satisfies Part 1 of the two-part *Advanced Bionics* framework, which also considers the similarities and material differences between the two sets of art, the cumulative nature of the art, and the extent of the overlap between the arguments. *Becton, Dickinson & Co.*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph) (factors (a), (b), and (d)).

The arguments presented by Petitioner under Grounds 1A, 1B, and 2, have already been discussed above. And the arguments made under Ground 3 relying on Park and Klein are also materially the same as those discussed during prosecution. The Petition relies on Chen-975 (Grounds 1A), Chen-812 (Ground 2) and Park (Ground 3) for their alleged teachings of all limitations except the “sealing element,” which Petitioner either agrees the references do not disclose, or questionably relies on their disclosures of a “filter strip” as allegedly disclosing the claimed sealing element. See Pet. at 31 (Ground 1A) (“the filter strip 44 is a ‘sealing element,’” but “[s]hould the Board disagree, the ‘sealing element’ claim term would have at least been rendered obvious by the combination of Chen '975 and Klein”); Pet. at 64

(Ground 2) (“the filter strip 4 is a “sealing element,” and a “the POSA would have understood that the filter strip 4 [acts as the sealing element]”); Pet. at 72 (Ground 3) (“Park discloses all of the limitations except for the “sealing element”). Then, Petitioner combines Klein to allege its disclosures of an “optical overlay” is the claimed “sealing element.” *See* Pet. at 33, 81.

But the Office already considered and rejected this very argument (combining a reference for their teachings of a filter strip being the required sealing element). For example, as discussed in Section II.B, during prosecution of the '338 Patent, the Examiner explained that WO2014131221 (Weishan) was the “closest art” of record but still did not disclose the claimed sealing element:

The closest prior art by Weishan (WO2014131221) discloses a touch sensing apparatus comprising a display and a plurality of emitters wherein the emitters transmit light in a plane extending over the touch surface. Weishan does not disclose a touch sensing apparatus comprising: a panel comprising a top surface that includes a touch surface, a back surface, and an edge surface; a plurality of light emitters arranged along a periphery of the panel; a substrate configured to support at least one of the plurality of light emitters such that the at least one of the plurality of light emitters transmits a portion of light in a plane extending over the touch surface; a support structure configured to support the substrate, the support structure comprising: a first portion extending substantially parallel to the edge surface, wherein the substrate is configured to be supported by the first portion; a second portion extending over an edge portion of the top surface of the panel; and a sealing element configured to rest on the edge portion of the top surface and further configured to be fitted between the edge portion of the top surface and the second portion of the support structure.

Ex. 1002 ('338 Patent File History) at 23 (emphasis added).

The Examiner also stated that it considered Exhibit 10—an invalidity Claim Chart provided by Applicant that relies on Weishan.

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49	Exhibit 8: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Prior Public Use and/or Commercial Offer for Sale of Defendant Promethean Inc.'s ActivPanel 4.5 Product, FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.
50	Exhibit 9: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Chinese Utility Model No. CN 203786707 U to Chen et al., FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.
51	Exhibit 10: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on International App. Pub. No. WO2014131221 to Chen et al., FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.
52	Exhibit 11: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Chinese Pub. App. No. 104391611 A to Hu et al., FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.
53	Exhibit 12: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Chinese Utility Model No. 203786708 U to Cao, FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.
54	Exhibit 13: Invalidity Claim Chart Against U.S. Patent No. 10,739,916 Based on Chinese Utility Model No. 204288179 U to Mo et al., FLATFROG LABORATORIES AB v. PROMETHEAN LTD. and PROMETHEAN INC., C.A. No. 1:19-cv-02246-MN, dated April 23, 2021, in 26 pages.

Examiner Signature	/ADAM R. GIESY/	Date Considered	09/29/2021
*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

T¹ - Place a check mark in this area when an English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.R.G./

Id. at 91 (showing Exhibit 10 Claim Chart relying on WO 2014131221 (Chen), which is the Weishan reference).

Notably, in order to reach allowance, the Examiner suggested amending the claims in order to overcome Weishan, as shown below:

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Patent No. 11,281,338
Patent Owner's Preliminary Response

<i>Examiner-Initiated Interview Summary</i>	Application No. 16/989,292	Applicant(s) Skagmo et al.		
	Examiner ADAM R GIESY	Art Unit 2694	AIA (First Inventor to File) Status Yes	Page 1 of 1

All Participants (applicant, applicants representative, PTO personnel)	Title	Type
ADAM R GIESY	Primary Examiner	Telephonic
Arpita Bhattacharyya	Attorney of Record	
Unnat Bhansali	Agent	

Date of Interview: 16 November 2021

Issues Discussed:

Other

Examiner suggested amending around newly found prior art - Weishan (WO2014131221). Applicant submitted proposed claim amendments (attached). Examiner agrees that the proposed claim amendments overcome the newly found prior art. Examiner agreed to enter the proposed claim amendments via Examiner's Amendment.

☒ Attachment

Id. at 25 (emphasis added). The amendments contained the clarification and addition of the “sealing element” limitation that Petitioner attempts to overcome with Klein.

Proposed Claim Amendments

(For discussion purposes only)

1-5. (Canceled).

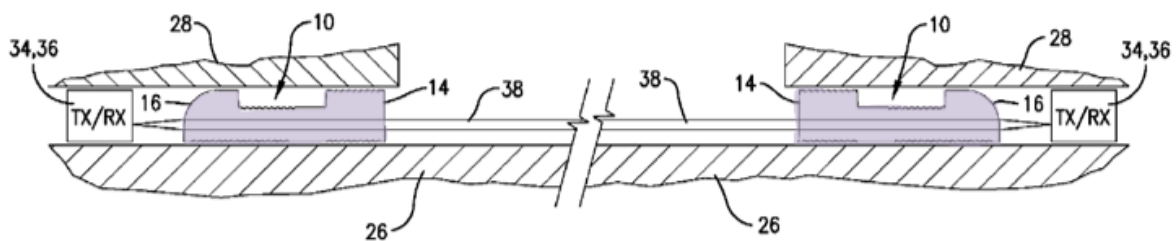
6. (Currently Amended) A touch sensing apparatus comprising:
- a panel comprising a top surface that includes a touch surface, a back surface, and an edge surface;
 - a plurality of light emitters ~~and detectors~~ arranged along a ~~perimeter~~ periphery of the panel;
 - a substrate configured to support at least one of the plurality of light emitters such that the at least one of the plurality of light emitters transmits a portion of light in a plane extending over the touch surface, ~~wherein an emitter is mounted on the substrate and is configured to transmit light in a plane above the touch surface and perpendicular to a normal of the touch surface; [[and]]~~
 - a support structure configured to support the substrate;
 - ~~wherein, the support structure is formed from a single monolithic piece comprising:~~
 - a first portion extending substantially parallel to the edge surface, wherein the substrate is configured to be supported by the first portion ~~and above and below the touch surface; [[and]]~~
 - a second portion extending over an edge portion of the top surface of the panel; and parallel to the touch surface to overlap with at least a portion of the touch surface
 - a sealing element configured to rest on the edge portion of the top surface and further configured to be fitted between the edge portion of the top surface and the second portion of the support structure.

Id. at 85 (emphasis added) (claim 6 is now Independent Claim 1). Notably, the prior claimed “optical element” was changed to the “sealing element” now claimed, as shown below:

14. (Currently Amended) The touch sensing apparatus according to claim 6, ~~comprising an optical element configured to be secured between the touch surface and the second portion of the support structure, wherein the sealing optical element comprises~~ a first surface facing the emitter at least one of the plurality of light emitters and being configured to receive the transmitted light from ~~[[the]]~~ that emitter and a second surface configured to receive light propagating across in the plane extending over a touch-interacting portion of the touch surface.

Id. at 86 (emphasis added).

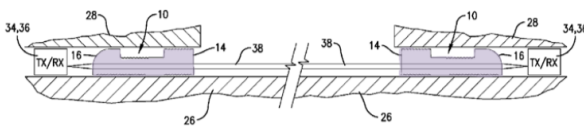
But Petitioner now substitutes the disclosures of Weishan with Klein for its arguments that Klein’s teachings of an “optical overlay” (optical filter) disclose the claimed sealing element. Pet. at 33, 81. In particular, Petitioner relies on Klein’s disclosure of an “optical overlay” to state that Klein’s “optical overlay advantageously provides ‘sealing or weatherproofing’ that protects ‘against the penetration of liquid, dust, dirt, or other possible system contaminants’:



Ex. 1006 at Fig. 8 (color added to highlight the optical overlay 10).” Pet. at 32-33, 81.

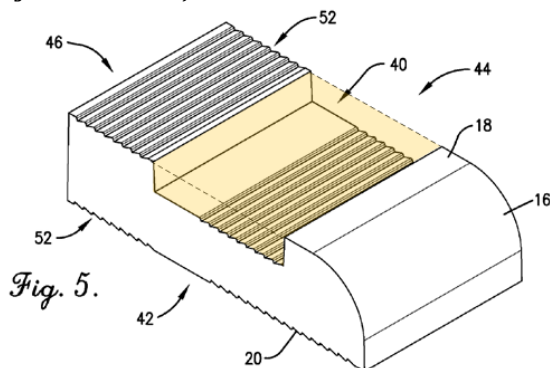
However, Weishan discloses the same optical filter as Klein, and substituting the teachings of Weishan with those of Klein does nothing to advance any different arguments than those already considered by the Office. As examples, the below table shows some of the similarities of the disclosures of Weishan (right) relied on by the Examiner during allowance versus those of Klein now relied on by Petitioner (left):

Klein (Ex. 1006) (Petition) (emphasis added)	Weishan (Ex. 2005) (USPTO) (emphasis added)
“Embodiments of the present invention relate to an optical overlay broadly comprising an inner wall, an outer wall, an upper wall, and a lower wall. The inner wall may be formed to include a planar surface. The outer wall may be spaced apart from the inner wall and may be formed to include a convex surface. The combination of the planar surface of the inner wall and the convex surface of the outer wall may form a plano-convex lens. The upper wall may include a first plurality of ridges that are generally parallel to the inner wall. The lower wall may include a second plurality of ridges that are generally parallel to the inner wall. The combination of the first plurality of ridges and the second plurality of ridges may form an optical filter.” Klein, 1:24-36 (emphasis added).	“Disclosed is a frame structure of a projection-type touch control electronic whiteboard to be arranged on the edge of an electronic whiteboard screen, comprising a frame, a light source assembly arranged inside the frame, and an optical filter arranged on the side opening of the frame; the side opening of the frame extends along the edge of the electronic whiteboard; a sensor of the light source assembly is vertically arranged on the circuit board of the light source assembly; the circuit board extends along the edge of the electronic whiteboard; and the vertically arranged sensor provides touch control positioning through the filter.” Weishan, Abstract (emphasis added).

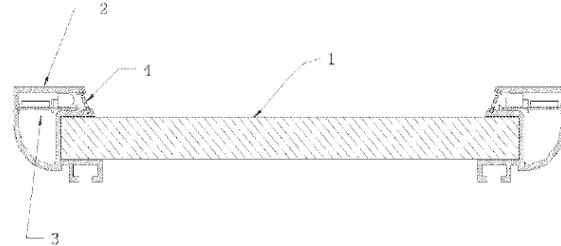


Pet. at 33 (adding color to highlight the optical overlay 10 of Klein, Fig. 8). “FIG. 8 is a sectional view of the electronic display system illustrating the transmitter transmitting a signal to the receiver **through the optical overlay.**” Klein, 2:1-3 (emphasis added). “[A]s seen in FIG. 8, once the system 12 is assembled, **the bezel 28 covers the optical overlay 10.** . . .” *Id.*, 5:39-42.

“In various embodiments, **a groove 40 may be formed in the optical overlay 10**, as seen in FIGS. 5 and 6. The groove 40 is configured to retain a gasket for sealing or weatherproofing the display 24 and the bezel 28 of the electronic display system 12.” *Id.*, 5:51-63, Fig. 5 (cited by Pet. at 35).

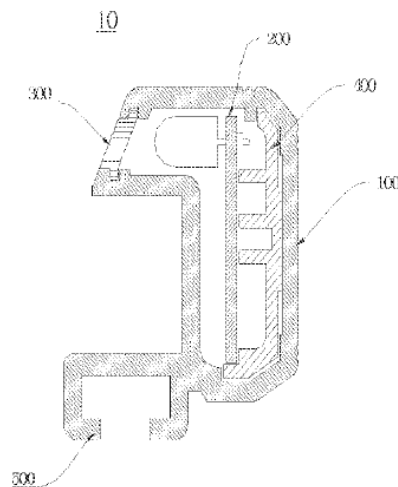


Pet. at 35 (highlighting the groove of Klein, Fig. 5).



Id., Fig. 2. “As shown in FIG. 2, it is a transverse cross-sectional view of a conventional electronic whiteboard. The electronic whiteboard includes a **substrate 1, a frame 2** disposed at four edges of the substrate 1, a sensor assembly 3 disposed in the frame 2, **and a filter 4 disposed at an opening at a side of the frame 2.**” *Id.* at 19.

“FIG. 5 is a transverse cross-sectional view of the frame structure . . . the bezel structure 10 includes bezel 100, a sensor assembly 200 disposed within the bezel 100, **and a filter 300 disposed at a side opening of the bezel 100** (refer to FIG. 5).” *Id.* at 20.



Id., Fig. 5. “The frame 100 has a columnar shape as a whole and has an

The groove 40 may be positioned along the upper wall 18, as shown, or along the lower wall 20, or, in some embodiments, along both the upper wall 18 and the lower wall 20.” <i>Id.</i> , 5:51-63, Fig. 5 (cited by Pet. at 35).	L-shaped receiving cavity. An opening extending along an edge of the screen of the electronic whiteboard is opened at a side of the frame 100, and the filter 300 is disposed at the opening.” <i>Id.</i>
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As shown, Petitioner uses Klein in the same way as Weishan—for adding the “sealing element” of Klein to the primary references that lack it. *See, e.g., id.* at 33-36, 81. But the Patent Office already considered such frames having optical “overlays” or filters and their openings or grooves for this very argument.

Becton factors (a), (b), and (d) are satisfied here. Because the combination of art and arguments presented by Petitioner here and those relied on during prosecution are substantially the same, Part 1 is also met for each of the references relied on for all grounds.

2. Part 2: Petitioner Fails To Demonstrate A Material Error By The Office

Because Part 1 is met, Petitioner must demonstrate material error under Part 2. However, the Petition is silent on this point and thus Petitioner fails to demonstrate “that the Office erred in a manner material to the patentability of the challenged claims,” as required under Part 2. *Advanced Bionics*, IPR2019-01469 at Paper 8. Petitioner fails to even state any alleged material error by the Office. Petitioner’s failure to address Part 2 validates denial under a § 325(d) analysis. *See* Pet. at 54.

This failure demonstrates that denial under § 325(d) is appropriate here. *Albany Int'l Corp. v. Kimberly-Clark Worldwide, Inc.*, PGR2021-00019, Paper 22, 8-9 (PTAB June 22, 2021) (denying institution because “[i]f a condition in the first part of the framework is satisfied and the petitioner fails to make a showing of material error, the Director generally will exercise discretion not to institute [] review.”). Notably, Petitioner recognizes that Chen-812 was cited in an IDS (which satisfies Part 1) but fails to even address Part 2 with respect to Chen-812. *See* Pet. at 54 (relying on pre-*Advanced Bionics* case law). Petitioner also fails to mention that Chen-975 (Chen-WO) was relied on by the Examiner during prosecution of the '338 Patent's immediate parent application. *See supra* Section III.A.1.a.

Petitioner merely provides a conclusion that “there is no evidence suggesting that the examiner substantively considered this reference” but as discussed above, that is contrary to the prosecution history and ignores the Office's clear consideration of Chen-812 and other substantially similar art. Petitioner is also silent on Chen-975 (Chen-WO), and specifically fails to address why the prior consideration of Weishan is not material error. Petitioner's lack of analysis is insufficient to meet the second part of the *Advanced Bionics* test and denial under §325(d) is appropriate.

Indeed, Petitioner does not meet its burden. To evaluate material error, the Board weighs *Becton, Dickinson* factors c, e and f. The Petition does not reference

any of these factors, let alone analyze them. *Vital Connect, Inc. v. Bardy Diagnostics, Inc.*, IPR2023-00381, Paper 7, 20 (PTAB July 11, 2023) (“[W]hile there are no ‘magic words’ necessary to address material error, Petitioner’s alleged grounds of unpatentability cannot establish material error *per se* under our binding precedent. . . . Otherwise, the reasonable likelihood standard of § 314(a) and the second part of the *Advanced Bionics* framework (‘material error’) would collapse into one.”).

Notably, regarding factor (c) “the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection,” Chen-WO was discussed with the Examiner during interviews regarding rejections of similar claims during the ’916 Patent prosecution. Ex. 2002, 256, 371-92. Petitioner fails to address this.

Accordingly, the *Advanced Bionics* framework is satisfied and the Director should exercise its discretion to deny institution. *See Advanced Bionics*, IPR2019-01469, Paper 6, 8; *Albany Int’l Corp.*, PGR2021-00019, Paper 22, 10-11.

IV. CONCLUSION

For the reasons set forth above, the Board should decline to institute *inter partes* review on the Petition Grounds pursuant to 35 U.S.C. § 325(d).

Case IPR2024-00013
Patent No. 11,281,338
Patent Owner's Preliminary Response

Dated: January 25, 2024

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Case IPR2024-00013
Patent No. 11,281,338
Patent Owner's Preliminary Response

CERTIFICATE OF SERVICES

I hereby certify that on this 25th day of January, 2024, a copy of the attached
PATENT OWNER's PRELIMINARY RESPONSE was served by electronic
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Counsel for Patent Owner

Case IPR2024-00013
Patent No. 11,281,338
Patent Owner's Preliminary Response

CERTIFICATION PURSUANT TO 37 C.F.R. § 42.24(d)

Pursuant 37 CFR 42.24(d), the undersigned certifies that this Preliminary Response complies with the type-volume limitation of 37 CFR §42.24(a). The word count application of the word processing program used to prepare this Preliminary Response indicates that the Preliminary Response contains 8,005 words, excluding the parts of the brief exempted by 37 C.F.R. § 42.24(a).

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Dated: January 25, 2024

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