NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC.,
Appellants

v.

POWER2B, INC.,
Appellee

2023-2121, 2023-2122

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2022-00315, IPR2022-00325.

Decided: November 14, 2025

BENJAMIN HABER, O'Melveny & Myers LLP, Los Angeles, CA, argued for appellants. Also represented by ABIGAIL GRACE MCFEE, NICHOLAS WHILT, RYAN KEN YAGURA; WILLIAM FINK, Washington, DC; THOMAS MCCLINTON HARRIS, Newport Beach, CA.

MARK THOMAS DEMING, Polsinelli PC, Chicago, IL, argued for appellee. Also represented by ADAM PETER DANIELS, Los Angeles, CA; JASON WIETJES, Dallas, TX.

Before DYK, STOLL, and STARK, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge* STOLL.

Dissenting opinion filed by *Circuit Judge* DYK.

STOLL, *Circuit Judge*.

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, "Samsung") appeal the Patent Trial and Appeal Board's Final Written Decisions in the *inter partes* reviews of U.S. Patent Nos. 10,664,070 and 9,946,369. Samsung challenges the Board's determination that Samsung presented a new obviousness ground in its reply briefs. According to Samsung, the ground was not new because it was presented in its IPR Petitions. Because the Board did not abuse its discretion in determining that the ground was not in the IPR Petitions and was thus new and forfeited under the Board's rules, we affirm.

BACKGROUND

I

Both the '070 and '369 patents are owned by Power2B, Inc. and are titled "Input System for Controlling Electronic Device." U.S. Patent No. 10,664,070 Title; U.S. Patent No. 9,946,369 Title. The patents share a specification, as the '070 patent is a continuation of the '369 patent.[1] The patents relate to "computer navigation" and "an apparatus which facilitates navigation of software stored on the apparatus." '070 patent col. 1 ll. 25–28. The specification describes challenges for then-existing electronic device interfaces, including that devices often organized data into display menus with levels, the navigation of which could detract from a user's experience. *See* '070 patent col. 1 ll. 38–63. The patented invention thus sought "to provide a pocket computer or hand held device which incorporates means for enabling easier access to data on the device," '070 patent col. 1 ll. 64–66, and "one aspect of the present

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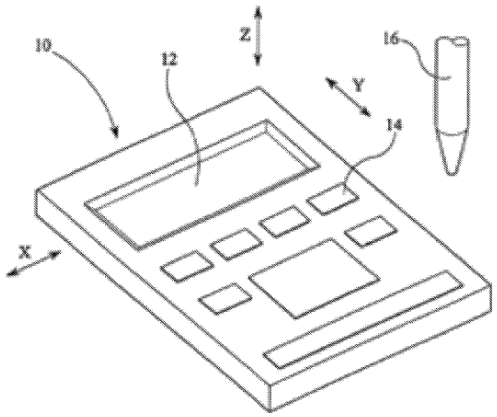
[1] Unless otherwise indicated, citations in this opinion are to the '070 patent's specification.

invention, therefore, . . . provide[s] an electronic device having a display for displaying data stored thereon, input means and control means for controlling the data displayed on the display in dependence on the three-dimensional position of the input means with respect to the device." '070 patent col. 2 ll. 1–8.

Figure 1 illustrates a device 10 having a display 12, buttons 14, and a stylus 16, where device 10 could be a hand-held computer, a personal digital assistant, or a mobile phone, *see* '070 patent col. 2 ll. 53–58, 61–63, col. 3 ll. 38–44:



'070 patent Fig. 1. Device 10 displays data on display 12, which may be a liquid crystal display (or LCD), and stylus 16 takes the form of a pen-shaped instrument that allows the user to select various options displayed on display 12. *See* '070 patent col. 2 ll. 57–62, col. 3 ll. 38–44. The stylus 16 emits a beam of light, which is sensed by a sensitive layer that is positioned over or incorporated in display 12. *See* '070 patent col. 4 ll. 63–67. The sensitive layer determines the X-Y coordinates of stylus 16 and sends a corresponding position signal to the central processing unit of device 10. *See* '070 patent col. 5 ll. 5–10. The angle and distance of stylus 16 from display 12 are determined and used to determine the position of stylus 16 in the Z-dimension. *See* '070 patent col. 6 ll. 18–22. Claim 1 of the '070 patent is illustrative:

1.[Pre] An interactive device comprising:

[1A] a stylus for emitting a beam of electromagnetic radiation;

[1B] a display screen disposed in a housing, the display screen displaying one or more selectable icons, the display screen forming a touch-sensitive display plane;

[1C] a sensor array disposed in the housing and forming a sensitive layer in a sensor plane proximate to the display screen, the sensor array is configured to detect at least a portion of the beam of electromagnetic radiation incident on the display screen; and

[1D] a processing unit configured to:

[1E] receive an output signal from the sensor array;

[1F] determine the output signal from the sensor array corresponds to a distribution pattern of electromagnetic radiation;

[1G] determine a three-dimensional position of the stylus relative to the interactive device based on the distribution pattern;

[1H] determine the three-dimensional position of the stylus corresponds to a first selectable icon of the one or more selectable icons based on the output signal;

[1I] determine at least a portion of the output signal corresponds to a selection function associated with the first selectable icon; and

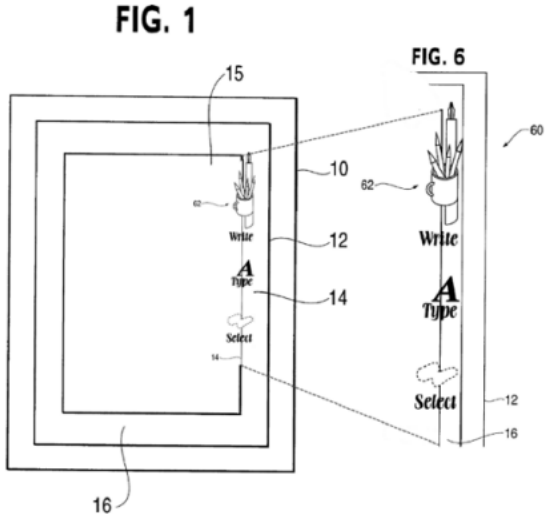
[1J] execute, based on the selection function, a function related to the first selectable icon.

'070 patent col. 8 ll. 10–35.

II

A

Samsung filed IPR Petitions seeking review of claims 1–18 of the '070 patent and claims 1–17 of the '369 patent. For all grounds against both patents, Samsung relied on a combination of Keely[2] and Geva.[3] Keely is directed to a notepad or notebook computer interface that facilitates input via a pen. *See* J.A. 1333. Keely's Figure 1 illustrates liquid crystal display 10 with writing surface 15, display area 12, and tool region 16. *See* J.A. 1334. Tool or status indicators are partially or fully displayed in tool region 16, which is around the edge of writing surface 15, as shown in Figure 6, *see* J.A. 1334:



Appellants' Br. 11 (combining J.A. 1311, 1314). Keely's system displays the tools when the pen is determined to be "over or within a predetermined threshold distance or region of an object," J.A. 1334, including when the pen is "in the air above the display," J.A. 1335. Specifically, the tools are "partially hidden . . . until approached by the pen (in the air above the screen), at which time they come fully into

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[2] U.S. Patent No. 6,337,698.

[3] Great Britain Published Patent Application No. 2,299,856.

view, and after the pen leaves, the tools return to the partially-hidden appearance." J.A. 1335. Keely uses an electromagnetic coil-based digitizer disclosed in an incorporated reference, U.S. Patent No. 6,756,970 ("Keely II"), to determine the position of the pen. *See* J.A. 1333–34.

Geva relates to position-determining input devices. *See* J.A. 1356. Geva's device includes a planar element 14 and two light sensor arrays 12 and 28, where the light sensor arrays 12 and 28 are coupled to optical lenses 15 and 32, as well as to a processing device 16, which comprises an intensity/distance computation function 17 and a memory element 19, *see* J.A. 1363–64, as shown in Figure 6:

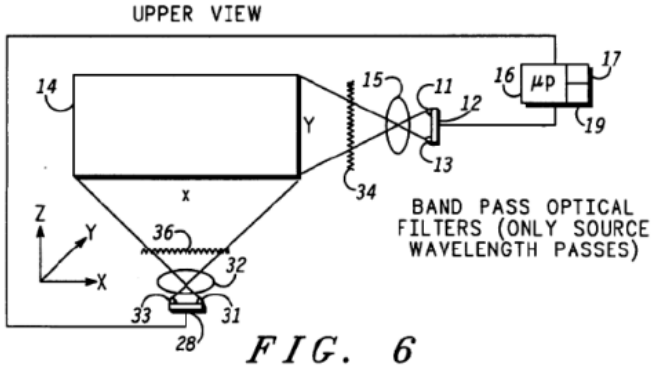
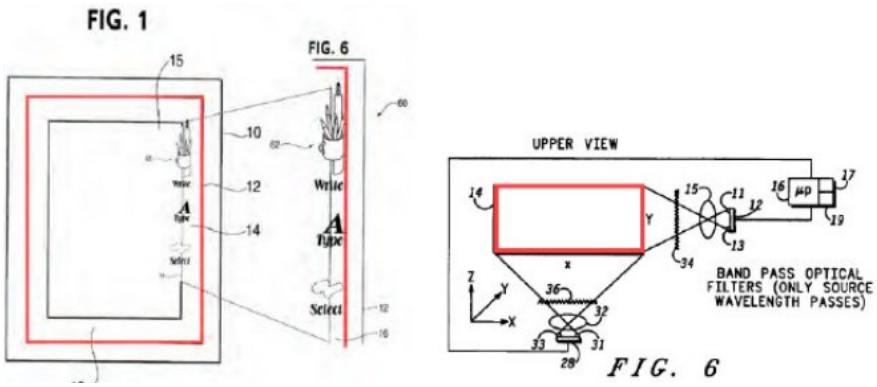


FIG. 6

J.A. 1353. "In operation, the light emitting cursor device 10, e.g. an active light pen, emits a beam of light on to the planar element 14." J.A. 1360. "The beam of light is reflected off the planar element 14 and along the surface of the planar element 14, through the optical lens 15 and onto the light sensor array 12." J.A. 1360. Intensity/distance computation function 17 of processing device 16 calculates the position of light emitting cursor device 10 according to the intensity of light incident on first and second light sensor arrays 28 and 30. *See* J.A. 1364.

At a high level, the Petitions proposed a combination of Keely and Geva that included the user interface, processing unit, and tools from Keely's notebook computer system combined with Geva's sensor arrays and light emitting

pen. *See* J.A. 276–83.[4] In specifically discussing limitation [1B] of the '070 patent, Samsung explained that Keely's display screen forms a "touch-sensitive plane" that is "compatible with Geva's planer [sic] element 14." J.A. 278. In support of that statement, the Petition cites to the declaration of Dr. Benjamin B. Bederson, which describes an annotated figure from the Petition by explaining that "Keely's display screen and Geva's planar element 14 [were] in red[, as illustrated below,] to show how Keely's touch-sensitive plane *can be used as Geva's planar element*," J.A. 377–78 (emphasis added):



J.A. 279 (citing J.A. 1311, 1314; J.A. 1353); *see also* J.A. 378.

After institution, Power2B responded that Samsung's combination of Keely and Geva excluded Geva's planar element 14, making the combination inoperable. In reply, Samsung alleged that its original combination incorporated Geva's entire "position determining input device," such that "Geva's sensor array and planar element would simply be placed on top of Keely's conventional LCD," with

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[4] The parties generally cite to the Petition for the '070 patent, and Samsung concedes that the Petition for the '369 patent is substantially similar to the Petition for the '070 patent in describing its combination. Samsung does not argue that the combination could be read differently between the two Petitions.

the planar element "replacing Keely's digitizer." J.A. 3888–900. Dr. Bederson also submitted a reply declaration pointing to his purported prior reliance on planar element 14 and clarifying that "[p]erhaps I could have been more precise by using the word 'with' in place of 'as,'" such that Keely's display would work "with" Geva's planar element 14. J.A. 4142.

Following the oral hearing, each party submitted additional briefing on what prior art combination Samsung included in its Petitions and whether it presented new arguments in its reply briefing.

B

In the Final Written Decisions,[5] the Board determined that Samsung had failed to include Geva's planar element 14 in the prior art combination put forward in its Petitions, and instead improperly introduced it as a new argument in its reply briefing. Under 37 C.F.R § 42.23(b), a "reply may only respond to arguments raised in the corresponding opposition . . . ." While the petitioner can respond to the patent owner's argument, it "may not submit new evidence or argument in reply that it could have presented earlier [in the petition], e.g. to make out a prima facie case of unpatentability." U.S. Patent Trial and Appeal Board, Consolidated Trial Practice Guide 73 (Nov. 2019); *see also Rembrandt Diagnostics, LP v. Alere, Inc.*, 76 F.4th 1376, 1384 (Fed. Cir. 2023) ("[T]he very nature of the reply and sur-reply briefs are to respond (whether to refute, rebut, explain, discredit, and so on) . . . within the confines of 37 C.F.R. § 42.23(b).").

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[5] In the Final Written Decision for the '369 patent, one administrative patent judge dissented as to each determinative issue. The parties do not treat the pertinent analysis from the Board decision in the IPR on the '070 patent and the majority decision in the IPR on the '369 patent as materially different. Unless otherwise stated, this opinion will cite to the Board's Final Written Decision on the '070 patent.

The Board considered the "operative issue" to be whether Samsung's combination of "[(1)] Geva's sensor arrays and planar element[, which] would simply be placed on top of Keely's conventional LCD[,] and [(2) Samsung]'s argument that it does not rely on Keely II's digitizer[,] are advanced in the Petition or whether the Reply presents new theories in violation of 37 C.F.R. § 42.23(b)." J.A. 19 (quotation marks and citation omitted). The Board determined that "the Petition relies on Keely's teachings of determining position in its element-by-element analysis." J.A. 19–20 (citing J.A. 278 (describing in the Petition with respect to limitation [1B] that Keely's "'notebook' or 'notepad' computer includes all of the components, including the display, processors, memory, sensors, and other components"); J.A. 278 (Petition describing how Keely's display screen "forms a touch-sensitive plane" for limitation [1B]); J.A. 279 (Petition addressing limitation [1C] and stating that, "[a]s explained above, Keely provides a touch-sensitive display plane"); J.A. 288 (Petition addressing limitation [1H] and stating that "a POSITA would have understood that Keely determines the three-dimensional position of the stylus corresponding to a first selectable icon from among selectable icons")). The Board determined that the "arguments in the Petition specifically relating to Keely's determination of pen position support [Power2B]'s contention that the combination in the Petition includes Keely II's hardware," and, thus, not Geva's planar element. J.A. 21; *see also* J.A. 20 (explaining how Keely's disclosed position detection is done by hardware disclosed in Keely II).

The Board then considered Samsung's arguments that its Petition presented a combination including Geva's planar element without Keely II's hardware. First, Samsung pointed to its motivation to combine section of the Petition, but the Board determined "the identified discussion of the Petition describes only how Keely and Geva are similar." J.A. 21–22 (citing J.A. 274). Second, Samsung argued that the Petition relied on using Geva's technology as an improved alternative to Keely II's hardware, without identifying where in the Petition Samsung allegedly made this

point. J.A. 22. Reviewing what it believed likely to be the sections that Samsung was referring to, the Board determined those sections (1) included no express reference to planar element 14, and (2) included the statement that "[i]t would have been obvious" to include Geva's sensor arrays "to detect at least a portion of the beam of electromagnetic radiation incident on the display screen," which is "consistent" with light "being detected 'incident on' Keely's 'display screen,'" and not with Geva, where "light emitting cursor device 10 'emits a beam of light on to the planar element 14,' which is 'reflected off the planar element 14' and 'onto the light sensor array 12.'" J.A. 22–24 (emphasis removed) (quoting J.A. 280; J.A. 1360). Third, Samsung argued that Keely merely points to Keely II as an example of a prior art input approach that could be used. But the Board was persuaded that Samsung "relie[d] on Keely for teaching determining the pen position and Keely states that its hardware is described in Keely II." J.A. 24 (citing J.A. 1334); *see also* J.A. 20 n.6. The Board looked to arguments in the Petition specifically relating to limitation [1B] on this point, noting how (1) Samsung relied on Keely for teaching "the display screen forming a touch-sensitive display plane" recited in limitation [1B], J.A. 278–79; (2) Keely describes its "touch-screen buttons," J.A. 1338, and tool display process, which "involves obtaining the pen location from the digitizer grid control process of the computer," J.A. 1335; and (3) Samsung relied on Dr. Bederson's declaration for this limitation, which stated "I have [] annotated Keely's display screen and Geva's planar element 14 in red to show *how Keely's touch-sensitive plane can be used as Geva's planar element*," J.A. 378 (emphasis added). J.A. 24–26.

The Board then considered Samsung's arguments that it had not presented a new combination in its reply briefing. First, the Board noted that, in response to Power2B's arguments, Samsung did not dispute that a combination without Geva's planar element would be inoperable. J.A. 26. Instead, Samsung (1) contended that Power2B had attacked a combination that Samsung had not advanced, and (2) submitted a reply declaration from

Dr. Bederson asserting that while he "could have been more precise," his original combination included "Geva's planar element [that] sits on top of Keely's LCD display." J.A. 26–27 (quoting J.A. 4142). The Board found, however, that Dr. Bederson's testimony on reply was "not a clarification of his initial testimony, but, instead, is a clear revision of his testimony and his opinion," and that such testimony was improper new testimony. J.A. 28–29.

The Board moved on to consider Samsung's briefing following oral argument. Samsung contended that the Petition's use of the word "compatible" in the sentence "[a]s shown in Figure 1, Keely's tool icons from Figure 6 have been superimposed to show how the display screen [] forms a touch-sensitive plane which is compatible with Geva's planar element 14" meant that Keely's tool icon and Geva's planar element "are capable of working together." J.A. 29 (quoting J.A. 4426). But the Board found this to be unsupported attorney argument, as this was the statement that relied on Dr. Bederson's now-excluded testimony on "how Keely's touch-sensitive plane can be used as Geva's planar element." J.A. 29 (quoting J.A. 378). Samsung also argued that Geva's planar element is discussed ten times in the Petition grounds, but the Board, "upon consideration of all discussion of Geva's planar element in the Petition, [found] that nothing in the Petition indicates that [Samsung]'s proposed combination is placing Geva's planar element on top of Keely's display," and instead "Keely's position determining is discussed throughout the Petition." J.A. 29–30.

After determining that Samsung's Petition included "argument and evidence indicating clear reliance on Keely's teachings of determining pen position," the Board concluded that Samsung's newly proposed combination placing Geva's planar element 14 on top of Keely's LCD display was improper and should be disregarded. J.A. 31. The Board, however, determined that it "need not reach that decision because, . . . even upon consideration of [Samsung]'s Reply arguments[, Samsung] does not demonstrate that claim 1 is unpatentable." J.A. 31. As to this alternative argument, the Board determined that Samsung did not show "that any touch-screen capabilities would be

maintained with Geva's planar element 14 on top of Keely's display," J.A. 39, because Geva, unlike Keely, teaches the advantages of "the position-determining input device [not] requir[ing] a specific, active board with in-built sensors for determining positions." J.A. 39–40 (quoting J.A. 1358). In other words, the Board ultimately concluded that Samsung had not carried its burden to demonstrate any of the challenged claims were unpatentable even under Samsung's new theory of obviousness.[6]

Samsung appeals. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

On appeal, Samsung contends that the Board erred in finding that Samsung did not rely on Geva's planar element 14 in its Petitions. We review the Board's determination of whether Samsung raised a combination that included Geva's planar element in its Petitions for an abuse of discretion. "It is for the Board to determine what grounds are being articulated in a petition and what arguments and evidence are being referred to in the responses and any replies." *Corephotonics, Ltd. v. Apple Inc.*, 84 F.4th 990, 1002 (Fed. Cir. 2023). "In particular, the Board has discretion to determine 'whether a [p]etition identified the specific evidence relied on in a [r]eply and when a [r]eply contention crosses the line from the responsive to the new.'" *Id.* (alterations in original) (quoting *Arriosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1368 (Fed. Cir. 2015)). On appeal, this court "review[s] the Board's assessments of what has been argued to and put before it in an IPR for abuse of discretion." *Id.* at 1002–03 (citing *Yita LLC v. MacNeil IP LLC*, 69 F.4th 1356, 1366 (Fed. Cir. 2023)). The Board abuses its discretion when its decision "(1) is clearly unreasonable, arbitrary, or fanciful;

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[6] Because we ultimately conclude that the Board did not abuse its discretion in declining to consider the arguments raised by Samsung in Reply, we need not further discuss the Board's alternative, substantive determination.

(2) is based on an erroneous conclusion of law; (3) rests on clearly erroneous fact finding; or (4) involves a record that contains no evidence on which the Board could rationally base its decision." *Ericsson Inc. v. Intell. Ventures I LLC*, 901 F.3d 1374, 1379 (Fed. Cir. 2018) (quoting *Bilstad v. Wakalopulos*, 386 F.3d 1116, 1121 (Fed. Cir. 2004)). Here, we see no legal error in the Board's analysis, and we cannot say that the Board's reading of the Petitions is unreasonable or that it otherwise abused its discretion in concluding that Samsung did not sufficiently raise in its Petitions the combination it now advances.[7]

Ground 1 in Samsung's IPR Petition mentions Geva's planar element several times:

- In discussing limitation [1A]: "Keely is agnostic as to its specific pen technology, but it would have been obvious to use a stylus for emitting a beam of electromagnetic radiation in Keely in view of the disclosure of Geva. Geva discloses a 'position-determining input device' for use in LCD displays comprising a 'light emitting cursor device 10, e.g. an active light pen, emits a beam of light on to *the planar element 14*.' A POSITA would have understood that light, including ultraviolet and infrared, is electromagnetic radiation with wavelengths between approximately 100 nm and 1 mm, that can be emitted in a beam. A POSITA would have been motivated to include Geva's light emitting pen in Keely's system for an improved arrangement to determine the position of the 'computer pen' using its emitted light since 'the digitizing technology must work effectively with a liquid crystal display [] screen, it must protect the LCD polarized surface, and it should accurately simulate the sense of pen

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[7] Samsung concedes that we review the Board's reading of its Petitions for an abuse of discretion. Oral Arg. at 2:47–3:29, https://oralarguments.cafc.uscourts.gov/default.aspx?fl=23-2121_04082025.mp3.

and paper.'" J.A. 276–77 (emphasis added) (citations omitted).

- In discussing limitation [1B]: "Keely's 'notebook or notepad computer includes a liquid crystal display 10, as depicted in FIG. 1, with a display area 12 of a size and shape approximating a piece of paper.' A POSITA would have understood that the 'notebook' or 'notepad' computer includes all of the components, including the display, processors, memory, sensors, and other components in a unitary housing, to ensure maximum mobility. Keely's display shows a page including selectable icons, such as a 'tool region' where 'tool icons' are partially visible until the 'pen is brought near one of the icons, at which time [the tools] become[] fully visible.' As shown in Figure 1, Keely's tool icons from Figure 6 have been superimposed to show how the display screen (outlined in red) forms a touch-sensitive plane which is compatible with *Geva's planer [sic] element 14* (annotated in red)." J.A. 278 (alterations in original) (emphasis added) (citations omitted).
- In discussing limitation [1C]: "A POSITA would have understood that Keely's display plane thus includes a sensor array disposed in the housing that forms a sensitive layer in a sensor plane proximate to the screen in order to collect the input for 'interacting' with electronic documents. As noted above, the housing would have been understood as the unitary housing of the 'notebook' or 'notepad' computer that includes all of the components, including the display, processors, memory, sensors, which ensures maximum mobility. A POSITA would have understood that the sensor that senses the radiation incident on the display screen would have been contained within the same unitary housing. Geva provides 'light sensor arrays 12 and 28' (annotated in green)' [sic] disposed 'at first and second edges of *the planar element 14*' and comprise a 'multiplicity of light sensing elements' coupled to optical lenses

to select only the 'desired light source,' as shown in Figure 6. It would have been obvious to a POSITA to include the sensor arrays disposed in the 'notebook computer' housing and forming a sensitive layer in a sensor plane proximate to the display screen 12 of Keely, because the sensor arrays in Geva are configured to detect at least a portion of the beam of electromagnetic radiation incident on the display screen." J.A. 279–80 (emphasis added) (citations and figure omitted).

- In discussing limitation [1G]: "As explained above, a POSITA would have combined Keely's display plane with the sensor array and processor of Geva in order to collect the positional input for 'interacting' with electronic documents. Keely provides the icons representative of various 'tools' when the system determines whether the pen is 'over or within a predetermined threshold distance or region of an object,' and, therefore, requires determining a three-dimensional position, but leaves the implementation details to a POSITA. As discussed above, light sensor arrays 12 and 28 are positioned in a first and second dimension of *the planar element 14* to indicate the "x" and "y" positions of light emitting stylus. In particular, Geva teaches that 'the intensity/distance computation function 17 of the processing device 16 determines which light sensing elements receive the highest intensity of incident light incident and thereby the two-dimensional position of the light emitting cursor device 10.'" J.A. 284–85 (emphasis added) (citations omitted).
- In discussing dependent claims 2 and 13: "Geva teaches that, in Figure 6, '[t]he light sensor arrays 12 and 28 are positioned for operation in two-dimensions of *the planar element 14* and are extensions of the light sensor array (light sensing element) 12 described for primary operation in one dimension of FIG. 1, FIG. 2 or FIG. 5.'" J.A. 290

(alteration in original) (emphasis added) (citations omitted).

- In discussing dependent claim 6: "Keely 'determine[es] 104 [sic] whether the pen is within a predetermined threshold distance of or in the region 16. Note that this includes the pen being in the air above the display and not touching the display.' 'If the pen comes down on the object or element with a tap, the system selects 34 the object.' A POSITA would have understood that this corresponds to a distance between the stylus and the interactive device. Additionally, Geva discloses calculating the 'position of the light emitting cursor device 10 in a third, "z", dimension' 'perpendicular to the first "x" dimension and to the second "y" dimension,' using the 'two-dimensional plane of FIG. 6.' As seen in Figure 7, Geva's intensity/distance computation function 17 of the processing device 16 calculates the third-dimension position according to the intensity of light sensed by light sensor arrays 12 and 28. A POSITA would have understood that Geva's 'z' dimension corresponds to the distance from the [sic] Geva's pen to *the planar element*. A POSITA would have combined Geva's third dimension determination into Keely's pen-based notepad computer system for the same reasons as described above in regard to element [1G]." J.A. 297–98 (first alteration in original) (emphasis added) (citations and figure omitted).

- In discussing dependent claims 9 and 12: "As explained above, Keely provides a touch-sensitive display plane. It would have been obvious to include Geva's sensor plane that is substantially parallel to the touch-sensitive display plane. Geva describes how its '*planar element 14*' is replaced by a 'beam splitter planar element 26' which mirror the light to the 'two light sensor arrays 12 and 28,' as shown in Figure 8 below. A POSITA would have understood that the sensor plane would be parallel to the display screen since Geva's light sensor arrays sense

light on the plane under the X-Y planar element." J.A. 299 (emphasis added) (citations omitted).

- In discussing dependent claim limitation [11B]: "As explained above, Keely-Geva determines the three-dimensional position of the stylus relative to the interactive device. Specifically, Geva's light sensor arrays 12 and 28 are positioned in a first and second dimension of *the planar element 14* to indicate the "x" and "y" positions of light emitting stylus. Geva teaches that 'the intensity/distance computation function 17 of the processing device 16 determines which light sensing elements receive the highest intensity of incident light incident and thereby the two-dimensional position of the light emitting cursor device 10.' Geva further discloses measuring the light intensity 'by the two light sensor arrays 12 and 28 of FIG. 6' for the 'intensity/distance computation function 17' 'to determine the position of the light emitting cursor device 10 in the third, "z" dimension,' as shown in Figure 7. A POSITA would have been motivated to include determining the three-dimensional position of the stylus based on the intensity of the beam of electromagnetic radiation, as taught by Geva, into Keely's notepad computer because Keely considers the pen's three-dimensional position in displaying tool options and selection." J.A. 302–03 (emphasis added) (citations and figure omitted).

Also pertinent is that in discussing claim limitation [1B], Samsung relied on Dr. Bederson's declaration submitted with the Petition to support the statement that "Keely's tool icons from Figure 6 have been superimposed to show how the display screen [] forms a touch-sensitive plane which is compatible with Geva's planer [sic] element 14." J.A. 278 (citing J.A. 377–78). Notably, Dr. Bederson further testified in his declaration that "Keely's touch-sensitive plane *can be used as Geva's planar element*," J.A. 378 (emphasis added).

On this record, we cannot say the Board abused its discretion in reading Samsung's Petitions to exclude Geva's planar element 14 and include the hardware used by Keely (i.e., the digitizer from Keely II). This is not a question of what we would consider the combination disclosed in the Petitions to be, or not to be, if we reviewed it in the first instance, but instead whether the Board's determination was "clearly unreasonable, arbitrary, or fanciful" or that the record "contains no evidence on which the Board could rationally base its decision." *Ericsson*, 901 F.3d at 1379. Samsung's reliance on Dr. Bederson's testimony that "Keely's touch-sensitive plane *can be used as Geva's planar element*" to support the statement that Keely's touch-sensitive plane "is compatible with" Geva's planar element 14 provides record evidence from which the Board could rationally conclude Geva's planar element was not included in the combination but instead was replaced by portions of Keely.[8] *See* J.A. 278 (citing J.A. 377–78).

Other statements in the Petition further support the reasonableness of the Board's determination that Samsung relied on the hardware from Keely's disclosures in its original combination. As the Board noted, the Petition described how a skilled artisan would understand that using Keely's "'notebook' or 'notepad' computer includes all of the components, including the display, processors, memory, sensors, and other components," J.A. 19 (quoting J.A. 278),

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[8] While Samsung's use of the term "compatible with" in its Petition may be ambiguous in a vacuum as to how the combination used Keely's touch-sensitive plane vis-à-vis Geva's planar element, any such ambiguity was removed by Dr. Bederson's statement that Keely's touch-sensitive plane can be used as Geva's planar element. As for Samsung's attempts to mitigate the import of its own expert's testimony through a later declaration purporting to clarify his intent, we agree with the Board that "using the word 'with' in place of 'as'" has an entirely different meaning that in this situation created a new expert opinion proposing a new combination. J.A. 28 (quoting J.A. 4142).

before going on elsewhere to describe the use of the computer device. The Petition also describes in its element-by-element analysis how Keely's display screen "forms a touch-sensitive plane," J.A. 19–20 (quoting J.A. 278–79), and that a skilled artisan "would have understood that Keely determines the three-dimensional position of the stylus corresponding to a first selectable icon from among selectable icons," J.A. 20 (quoting J.A. 288).[9] Moreover, none of the statements in the Petition clearly state the combination Samsung advances on appeal—i.e., Geva's planar element being placed on top of Keely's LCD display. If this was Samsung's intended combination, it could have unambiguously said so in its Petitions. And it is a petitioner's burden to "define the scope of the litigation all the way from institution through to conclusion." *SAS Inst., Inc. v. Iancu*, 584 U.S. 357, 367 (2018).

Indeed, when pressed at oral argument where in the Petitions Samsung disclosed the combination it now advances,[10] Samsung's counsel consistently directed this

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[9] The Board further explained how Keely discloses "that it 'is directed to interface elements of a pen based, notepad or notebook computer, the hardware of which is described in detail in' Keely II"—thus disagreeing with Samsung's argument that Keely is agnostic as to the hardware used. J.A. 20 & n.6 (quoting J.A. 1334). Substantial evidence from Keely itself supports the Board's determination. *See, e.g.*, J.A. 1334.

[10] Samsung again attempted to refine its combination at oral argument, where it described its intended combination as using the software of Keely with the planar element of Geva. Even with this formulation of the combination, Samsung could not point to where this was clearly articulated in the record before the Board, let alone in the Petitions. Instead, when pressed by this court about its initial citation to the Petition for the '070 patent regarding this formulation of the combination, Samsung pointed this court to its reply briefing, specifically the language that the

court to the Petition's disclosure for limitation [1H] in the '070 patent, *which does not cite to Geva at all*. *See, e.g.*, Oral Arg. at 14:42–15:38 (citing J.A. 287) ("[Samsung's Counsel:] I would *again* direct your Honors to [J.A.] 287, that shows Keely's LCD . . . . [Court:] Does it show . . . Geva's sensor array is being placed on top of Keely's conventional LCD? [Samsung's Counsel:] That was what we intended when we made this figure. It does not superimpose this rectangle onto this rectangle. We do make that super[im]position in the reply." (emphasis added)).[11] Counsel pointed to the combination of Keely's Figures 9 and 6 as somehow disclosing Samsung's intent to tell the Board in its Petition that it was relying on Keely's software but not its digitizer, which it was instead replacing with Geva's planar element. *See* Oral Arg. at 10:57–11:32, 17:13–18:32. It is unclear how the Board was to understand such an intent when both figures are from Keely and nothing from Geva, let alone planar element 14, is disclosed.[12] The Board should not have to divine the intent of

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"combination [was] Geva's input functionality . . . [with] Keely's user interface features." Oral Arg. at 11:34–13:44 (citing Samsung's reply briefing at J.A. 3887–88). But as we noted, even this language is broad and provides little clarification to know what from each of the references was being used, and counsel did not point to other specific language in its briefing. Oral Arg. at 13:58–14:42.

[11] The dissent supposes that Samsung's counsel merely transposed page numbers in this colloquy with the court. *See* Dissent Op. 6. We respectfully disagree with the dissent, however, that "Samsung's counsel was clearly referring to page 278," *id.*, as counsel was describing a figure, and there is no figure on J.A. 278.

[12] To the extent Samsung's counsel attempted at oral argument to relate aspects of an annotated figure from Keely included in its Petition to Figure 6 of Geva, *see* Oral Arg. at 17:13–18:32, we are not persuaded for two reasons: (1) the supporting passage describing the annotated

a petitioner separate from what is explicitly described in the petition grounds themselves—indeed, doing so could constitute legal error. *Sirona Dental Sys. GmbH v. Institut Straumann AG*, 892 F.3d 1349, 1356 (Fed. Cir. 2018) (stating that the Board is not permitted "to deviate from the grounds in the petition"); *Koninklijke Philips N.V. v. Google LLC*, 948 F.3d 1330, 1336 (Fed. Cir. 2020) (holding that the Board erred by raising an obviousness theory based on a combination not provided in the petition).

While there may also be statements in the Petitions that could reasonably be read to support Samsung's position, that is not the standard we apply on review. *Medtronic, Inc. v. Teleflex Innovations S.à.r.l.*, 69 F.4th 1341, 1348 (Fed. Cir. 2023) ("If the evidence will support several reasonable but contradictory conclusions, we will not find the Board's decision unsupported by substantial evidence simply because the Board chose one conclusion over another plausible alternative." (quoting *Velander v. Garner*, 348 F.3d 1359, 1378 (Fed. Cir. 2003))). And Samsung has not shown that the Board's conclusion as to what combination was disclosed in Samsung's Petitions was unreasonable.[13]

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figures from the Petition on J.A. 288 specifically addresses the color coding with no reference to Geva; and (2) Geva's Figure 6 on J.A. 279 comes from the Petition's discussion of limitation [1B], which is fairly read as not including Geva's planar element, as discussed above.

[13] The dissent quotes several statements from the petition for review of the '369 patent. *See* Dissent Op. 5. As we previously noted, Samsung itself concedes "the '369 Petition was substantially similar to the '070 Petition in describing its combination," Appellants' Br. 17, Samsung does not argue that the combination could be read differently between the two Petitions, and the parties mainly cite to the record for the '070 Petition. To be sure, in considering the parties' arguments and reaching our decision

Samsung also contends that the Board committed legal error by violating the Administrative Procedure Act (APA) because it failed to consider all of Samsung's arguments and evidence, as it only selectively quoted from the Petitions and ignored Samsung's explicit references to planar element 14. This contention is belied by the record. The Board summarized the parties' arguments, addressed the portions of the Petitions relevant to its affirmative analysis, and then spent ten pages addressing and finding unpersuasive Samsung's arguments to the contrary from each stage of the relevant briefing, including explicitly stating that it had considered "all discussion of Geva's planar element in the Petition." J.A. 29. There is a difference between the Board failing to consider a party's arguments and the Board merely being unpersuaded by a party's arguments. And on the record before us, we cannot say that the Board was required to do more.

Because we affirm the Board's determination that Geva's planar element 14 was not included in the prior art combination asserted in Samsung's Petitions, we need not address the other issues raised by Samsung. A petitioner is held to the unpatentability grounds advanced in its petition. *See, e.g.*, *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) ("It is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition identify with particularity the evidence that supports the grounds for the challenge to each claim. . . . Unlike district

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here, we assessed all relevant statements made in both the '070 and '369 Petitions. And, as acknowledged, there are certain statements in the Petitions that, while not sufficient, are more favorable to Samsung's arguments on appeal. But, looking at all the statements in the Petitions, including those specifically pulled out and quoted by the dissent, nothing changes our conclusion that under the proper standard of review, Samsung has failed to show the Board's reading of the combination disclosed in the Petitions was an abuse of discretion.

court litigation—where parties have greater freedom to revise and develop their arguments over time and in response to newly discovered material—the expedited nature of IPRs bring[s] with it an obligation for petitioners to make their case in their petition to institute." (quotation marks and citation omitted)); *Wasica Fin. GmbH v. Cont'l Auto. Sys., Inc.*, 853 F.3d 1272, 1286 (Fed. Cir. 2017) ("After [patent owner] pointed out the flaws of this position, [petitioner]'s ensuing arguments to the Board and to us effectively abandoned its petition in favor of a new argument. . . . Rather than explaining how its original petition was correct, [petitioner]'s subsequent arguments amount to an entirely new theory of *prima facie* obviousness absent from the petition. Shifting arguments in this fashion is foreclosed by statute, our precedent, and Board guidelines."); *Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1330–31 (Fed. Cir. 2019) ("[A]n IPR petitioner may not raise in reply an entirely new rationale for why a claim would have been obvious." (quotation marks and citation omitted)); *Corephotonics*, 84 F.4th at 1002 ("Any marked departure from the grounds identified with particularity in the petition would impose 'unfair surprise' on the patent owner and, consequently, violate both the APA and the IPR statute." (quoting *Arthrex Inc. v. Smith & Nephew, Inc.*, 935 F.3d 1319, 1328 (Fed. Cir. 2019)). Here, Samsung proposed what was undisputedly an inoperable combination for all grounds in its Petitions. After reaching this conclusion, the Board needed to go no further, and this court will not do so. *Cf. Intelligent Bio-Sys.*, 821 F.3d at 1369 ("Once the Board identifies new issues presented for the first time in reply, neither this court nor the Board must parse the reply brief . . . .").

CONCLUSION

We have considered Samsung's arguments and find them unpersuasive. For the foregoing reasons, we affirm the Board's holding that Samsung did not carry its burden to show that claims 1–18 of the '070 patent and claims 1–17 of the '369 patent are unpatentable.

AFFIRMED

NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC.,
Appellants

v.

POWER2B, INC.,
Appellee

2023-2121, 2023-2122

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2022-00315, IPR2022-00325.

DYK, *Circuit Judge*, dissenting.

The issue here is whether the petitioner's proposed combination of Geva and Keely satisfies claim limitation 1[B] (and related claim limitations 10[B] and 16[B]) in the '070 patent that teach a "display screen forming a touch sensitive display plane" and similar claim limitations 1[G] and 1[H] (and related claim limitations 11[E] and 11[F]) in

the '369 patent.[1] Samsung contends that a Keely-Geva combination including the planar element of Geva would satisfy the limitations. Without reaching that issue, the majority affirms the Board's determination that Samsung did not propose a combination that utilized Geva's planar element. In my view, as the dissenting judge in the '369 IPR proceedings noted, the Board plainly misread the proposed combination. I respectfully dissent from the majority's affirmance of the Board.

I

Both challenged patents are directed toward an input system, such as a stylus, that is used to control electronic devices through electromagnetic radiation. Part of the Board's confusion apparently stems from the fact that both Keely and Geva disclose systems with touch screen elements, including touch sensitive displays and styluses, and both include digitizers. Keely's invention uses a coil-based digitizer, which "produc[es] an electromagnetic field which interacts with one or more coils in the pen from which the pen position, angle, and stylus pressure are determined." J.A. 1419 col. 4 ll. 23–25. But this digitizer did not satisfy the claim limitations because the asserted patents claim devices that use "light sensors," '369 patent, claim 1, or a "sensor array . . . configured to detect . . . electromagnetic radiation" as digitizers. '070 patent, claim 1. Geva discloses what it characterizes as an improved digitizer over coil-based electromagnetic digitizers previously known in the art using light sensors in a sensor array "disposed at first and second edges of the planar element 14." J.A. 1363

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[1] The '369 patent uses somewhat different language—"a processing unit configured to . . . determine . . . movement of [an] object relative to [an] interactive device in a third dimension of [a] 3D space; and execute, based on the movement of the object, a function. . . ."

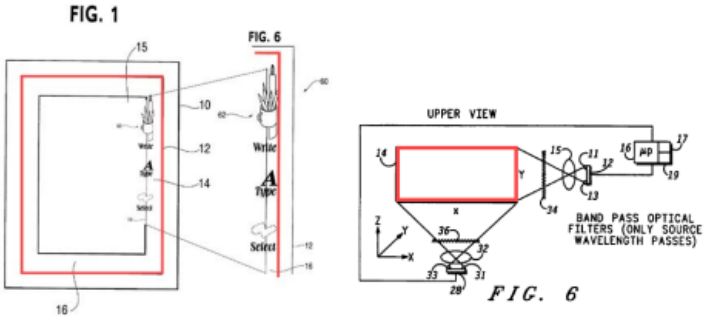
col. 8 ll. 37–38. The use of this planar element in the Keely-Geva combination is alleged to satisfy the disputed claim elements. The Board concluded, first, that Samsung did not propose using the planar element from Geva in its combination, but rather the coil-based digitizer from Keely. And second, the Board found that even if Samsung's proposed combination included Geva's planar element, it did not propose removing the coil-based digitizer from Keely, so the proposed combination would be redundant.

II

As to the first conclusion, the Board found that the portions of Samsung's petitions setting forth its proposed combination "include no express reference to planar element 14," J.A. 23, and that "nothing in the Petition[s] indicate[] that Petitioner's proposed combination is placing Geva's planar element on top of Keely's display." J.A. 29, 66. These findings are clearly erroneous. Samsung was quite clear that it proposed using the planar element from Geva to teach limitations 1[B], 10[B], and 16[B] of the '070 patent and limitations 1[G], 1[H], 11[E], and 11[F] of the '369 patent. Indeed, the planar element, the light sensors disposed within planar element 14, and a processing device used to received signals from the light sensors disposed within planar element 14 are the only elements that Samsung proposed to use from Geva.

The panel majority quotes at length from the '070 Petition, which repeatedly references the planar element from Geva. The quoted portions of the '070 Petition themselves reference that Geva's planar element in included in Samsung's combination. In arguing its combination of Keely and Geva disclosed elements 1[B], 10[B], and 16[B], Samsung illustrated how Keely's "display screen (outlined in

red) forms a touch-sensitive plane which is compatible with Geva's plan[a]r element 14 (annotated in red)." J.A. 278.



J.A. 279. This sentence and image show the proposed combination using planar element 14 from Geva. So too does Samsung's argument in discussing elements 1[C], 10[C], and 16[C] that "[i]t would have been obvious to a POSITA to include [Geva's] sensor arrays disposed in the 'notebook computer' housing and *forming a sensitive layer in a sensor plane proximate to the display screen 12 of Keely* . . . ." J.A. 280 (emphasis added). Further, the '070 Petition discusses Geva's planar element in the context of how "[i]t would have been obvious to include Geva's sensor plane that is substantially parallel to the touch-sensitive display plane." J.A. 299. Each reference can only be read to suggest a combination of Geva's planar element 14 with Keely's display.

Indeed, Power2B in its patent owner response acknowledged that skilled artisans would understand that Geva's planar element is intended to be placed above LCD displays like the one disclosed in Keely. It stated: "Geva's teachings are unambiguous, and a POSITA would have understood that Geva's 'improved alternative arrangement' provides a planar element—not a display—designed to sit on-top of a display." J.A. 2513. Further, Samsung's combination of Keely and Geva used the light-emitting cursor

device of Geva, rather than Keely's coil-based pen. As the Board agreed, if Geva's light-emitting pen were not used with Geva's planar element, the system would be inoperable because the light from the light-emitting pen of Geva would not be properly detected.

Samsung's discussion of a combination of Keely and Geva that includes planar element 14 is also clear in the '369 Petition. In its discussion of elements 1[G], 1[H], 11[E], and 11[F] of the '369 patent, Samsung argued "[a] POSITA would have understood that Geva's 'z' dimension corresponds to the distance from Geva's pen *to the planar element* which is continuously calculated as the pen moves positions and changes the intensity of light sensed by light sensor arrays 12 and 28," J.A. 4665 (emphasis added), allowing for tools and associated processes to begin "[o]nce the pen is pulled up." J.A. 4666. Likewise, Samsung argued that skilled artisans "would have used Geva's light sensor arrays detecting light from the 'light emitting cursor device' incident on planar element 14 (outlined in red in Figure 6) to detect light on Keely's display screen . . . because doing so would be a simple design choice in order to collect the positional input for 'interacting' with electronic documents." J.A. 4655 (citing J.A. 4754). Therefore, the '369 Petition explicitly suggests a combination of Keely and Geva that includes planar element 14. This is also the combination that Board understood when it decided to institute the '369 IPR proceedings, as the Board stated that Samsung "relies on Geva's teachings relating to light sensor arrays 12 and 28" including that "'[t]he light sensor arrays 12 and 28 preferably compromise a multiplicity of light sensing elements and are disposed at first and second edges of the planar element 14.'" J.A. 6474 (alteration in original) (quoting J.A. 1363 col. 8 ll. 36–38).

Notably, the panel majority does not dispute that these explicit statements in the '369 Petition are sufficient to propose a combination of Keely and Geva that includes Geva's

planar element. If the two petitions are to be treated the same, as the majority concludes, Majority Op. 7 n.4, I fail to see how the language in the '369 Petition cannot overcome any ambiguity in the '070 Petition.

In concluding that the '070 Petition can be read to exclude planar element 14 from Samsung's proposed combination, the panel majority relies in part on what appears to be a transposition of page numbers that Samsung's counsel made at oral argument to find Samsung did not direct the court to a disclosure in its original Petition of the proposed combination. Majority Op. at 19–20 (discussing one statement at oral argument referencing page 287 of the Joint Appendix). In context, Samsung's counsel was clearly referring to page 278 and the corresponding figure on page 279 of the Joint Appendix, and counsel directed the court to the correct page earlier in the oral argument. Oral Arg. at 7:54–8:49 ("[Samsung's counsel]: If you look at the petition, at Appendix page 278, this is where we set forth the combination . . . ."); 15:14–15:38 (discussing figure "on the top of page 279").[2] This matched the evidence Samsung presented in its briefing that it argued disclosed the proposed combination including planar element 14 in the context of elements 1[B], 10[B], and 16[B]. Appellants' Br. 27–28 (citing J.A. 278).

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[2] The majority concludes counsel's discussion of the figure on page 279 of the Joint Appendix is not persuasive because the discussion of limitation 1[B] preceding the figure "is fairly read as not including Geva's planar element." Majority Op. 21 n.12. The figure, which is in the context of Samsung's discussion of limitations 1[B], 10[B], and 16[B], is a further expansion of Samsung's express explanation on the previous page that Keely's display screen is "compatible with" Geva's planar element 14 in its proposed combination. J.A. 278–79.

In support of the Board's decision, the majority also relies on a declaration by Samsung's expert, Dr. Bederson, submitted with the '070 Petition, which states that "Keely's touch-sensitive plane can be used as Geva's planar element." Majority Op. 18 (emphasis removed) (quoting J.A. 377–78). Admittedly, this might suggest the use of Keely's touch-sensitive plane as a replacement for Geva's planar element. However, the expert's declaration cannot override the petition's plain language. The '070 Petition does not quote Dr. Bederson's statement and never suggests Keely's touch-sensitive plane replaces Geva's planar element 14. Rather, as the Board noted, Samsung asserted that Keely's display screen "forms a touch-sensitive plane which is compatible with Geva's plan[a]r element 14." J.A. 15 (quoting J.A. 278). This is not inconsistent with Samsung's proposed combination, but rather defines it. Further, Dr. Bederson's declaration in the '070 IPR proceedings do not have any bearing on the '369 IPR proceedings, where Dr. Bederson's declaration did not include this language.

III

While the majority apparently does not rely on this, the Board's finding that Samsung's proposed combination created a redundancy by using Keely's coil-based digitizer in conjunction with Geva's digitizer is also incorrect. The only reference to a "digitizer" in both petitions is (quoting Geva in both) that "Geva is designed to 'work effectively with a liquid crystal display (LCD) screen' as 'an improved alternative arrangement for determining the position of digitizer input elements.'" J.A. 280–81 (quoting J.A. 1356–57); *accord* J.A. 4656 (quoting J.A. 1356–57). This does not suggest retaining a coil-based digitizer. To the contrary, it suggests replacing the coil-based digitizer with the alternative digitizer disclosed in Geva—which Geva itself describes as an "improved alternative arrangement"—that includes planar element 14. J.A. 1357 col. 2 ll. 6–21.

IV

The Board also erred in rejecting Samsung's reply arguments. On reply, Samsung responded to arguments made in Power2B's responses that relied on the same combination disclosed in Samsung's petitions. For example, Samsung argued that the Board "readily and correctly recognized Petitioner's combination" in both decisions to institute IPR proceedings by referencing Geva's teaching related to planar element 14. J.A. 3890; *accord* J.A. 8448. Samsung further argued that Power2B "acknowledges that Geva's input system, including its planar element, would have been placed on top of Keely's conventional LCD" in its patent owner responses. J.A. 8449; *accord* J.A. 3891 (citing J.A. 2513). These arguments thus did not constitute "'entirely new rationale[s]' worthy of being excluded." *Ericsson Inc., v. Intell. Ventures I LLC*, 901 F.3d 1374, 1381 (Fed. Cir. 2018) (quoting *Intelligent Bio-Systems Inc. v. Illumina Cambridge, Ltd.*, 821 F.3d 1359, 1370 (Fed. Cir. 2016)). These arguments "merely expand[] on a previously argued rationale" and thus are permissible clarifications of the arguments Samsung put forward in its petitions. *Id.*; *cf. Axonics, Inc. v. Medtronics, Inc.*, 75 F.4th 1374, 1380 (Fed. Cir. 2023) (holding Board abused discretion in failing to consider Petitioner's reply arguments related to claim construction).

Because the Board clearly erred in determining Samsung's petitions failed to disclose a combination of Keely and Geva that included Geva's planar element 14, I respectfully dissent. On the merits, I would hold that the Board's determinations that the Keely-Geva combination does not satisfy the claim limitations and that there was no motivation to combine Keely and Geva are not supported by substantial evidence, largely for the reasons cited in the dissent in the '369 IPR proceedings.