

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SONY COMPUTER ENTERTAINMENT AMERICA LLC,
Petitioner,

v.

APLIX IP HOLDINGS CORPORATION,
Patent Owner.

Case IPR2015-00230
Patent 7,463,245 B2

Before SALLY C. MEDLEY, BRYAN F. MOORE, and
JASON J. CHUNG, *Administrative Patent Judges*.

MEDLEY, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
Inter Partes Review
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

We have jurisdiction to hear this *inter partes* review under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed herein, Petitioner has shown by a preponderance of the evidence that claims 1–20 of U.S. Patent No. 7,463,245 B2 are unpatentable.

A. Procedural History

Petitioner, Sony Computer Entertainment America LLC, filed a Petition requesting an *inter partes* review of claims 1–20 of U.S. Patent No. 7,463,245 B2 (Ex. 1001, “the ’245 patent”). Paper 2 (“Pet.”). Patent Owner, Aplix Holdings Corporation, filed a Preliminary Response. Paper 15 (“Prelim. Resp.”). Upon consideration of the Petition and Preliminary Response, on May 14, 2015, we instituted an *inter partes* review of claims 1–20, pursuant to 35 U.S.C. § 314. Paper 16 (“Dec.”).

Subsequent to institution, Patent Owner filed a Patent Owner Response (Paper 19 (“PO Resp.”)) and Petitioner filed a Reply (Paper 26 (“Pet. Reply”)).

Patent Owner filed a Motion for Observations (Paper 31) and Petitioner filed a Response to the Observations (Paper 35).

An oral hearing was held on January 19, 2016, and a transcript of the hearing is included in the record (Paper 37; “Tr.”).

B. Related Proceedings

The ’245 patent is involved in the following lawsuit: *Aplix IP Holdings Corp. v. Sony Computer Entertainment, Inc.*, No. 1:14-cv-12745 (MLW) (D. Mass.). Pet. 59.

C. The ’245 Patent

The ’245 patent relates to hand-held electronic devices, such as cell phones, personal digital assistants (“PDAs”), pocket personal computers, smart phones, hand-held game devices, bar-code readers, and remote controls having a keypad or one or more input elements. Ex. 1001, 1:13–19. The hand-held device includes, on one surface, one or more software configurable input elements that can be manipulated by a user’s thumb(s) or

stylus, and on the other surface, one or more software configurable selection elements that can be manipulated by a user's finger(s). *Id.* at Abstract.

D. Illustrative Claim

Of the challenged claims, claims 1 and 12 are the only independent claims. Claims 2–11 depend either directly or indirectly from claim 1 and claims 13–20 depend either directly or indirectly from claim 12.

Claim 1, reproduced below, is illustrative.

1. A hand-held device comprising:

a processor configured to process a selected application having two or more functions;

a first surface including at least a first input element mapped to at least a first function of the selected application; and

a second surface including at least a second input element having a sensor pad comprising a selectively configurable sensing surface that provides more than one delineated active area based on the selected application, wherein at least a first delineated active area is mapped to a second function of the selected application and a second delineated active area is mapped to a third function of the selected application, further wherein the second surface is substantially in opposition to the first surface.

Ex. 1001, 15:28–43.

E. Grounds of Unpatentability

We instituted an *inter partes* review of claims 1–20 on the following grounds:

Claims	Basis	References
1–5, 7, 10–15, 17, and 20	§ 103(a)	Liebenow ¹ and Andrews ²

¹ Liebenow et al., US 2002/0118175 A1, Pub. Aug. 29, 2002 (Ex. 1003).

² Andrews et al., PCT WO 00/59594, Pub. Oct. 12, 2000 (Ex. 1004).

Claims	Basis	References
8, 9, and 17–19	§ 103(a)	Liebenow and Hedberg ³
6	§ 103(a)	Liebenow and Martin ⁴
16	§ 103(a)	Griffin ⁵ and Liebenow

II. ANALYSIS

A. *Level of Skill of Person in the Art*

We find that the level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

B. *Claim Interpretation*

In an *inter partes* review, we construe claim terms in an unexpired patent according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see also In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1278–79 (Fed. Cir. 2015), *cert. granted sub nom. Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 890 (mem.) (2016). Consistent with the broadest reasonable construction, claim terms are presumed to have their ordinary and customary meaning as understood by a person of ordinary skill in the art in the context of the entire patent disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed.

³ Hedberg, PCT WO 99/18495, Pub. Apr. 15, 1999 (Ex. 1005).

⁴ Martin et al., US 7,336,260 B2, Iss. Feb. 26, 2008 (Ex. 1006).

⁵ Griffin et al., US 2003/0020692 A1, Pub. Jan. 30, 2003 (Ex. 1007).

Cir. 2007). Also, we must be careful not to read a particular embodiment appearing in the written description into the claim if the claim language is broader than the embodiment. *See In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993) (“limitations are not to be read into the claims from the specification”). However, an inventor may provide a meaning for a term that is different from its ordinary meaning by defining the term in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Petitioner proposes constructions for the following claim terms: “delineated active area” and “the input element and the touch sensing input element are communicatively coupled to a host device.” Pet. 8–9. In our Decision to Institute, we determined that it was not necessary to construe “delineated active area” (claims 1 and 12) and agreed with Petitioner’s construction for “the input element and the touch sensing input element are communicatively coupled to a host device” (claim 17). Dec. 6. Neither party has indicated that our determinations in that regard were improper and we do not perceive any reason or evidence that now compels any deviation from our initial determinations. Accordingly, the following construction applies to this Decision:

Claim Term	Construction
the input element and the touch sensing input element are communicatively coupled to a host device (claim 17)	occurs when a handheld device is connected to a host device over a network

C. Obviousness Over Liebenow and Andrews

Petitioner contends that claims 1–5, 7, 10–15, 17, and 20 are unpatentable under 35 U.S.C. § 103 based on Liebenow and Andrews. Pet. 24. To support its contentions, Petitioner provides a detailed showing mapping limitations of claims 1–5, 7, 10–15, 17, and 20 to structures described by Liebenow and Andrews. Pet. 11–27. Petitioner also relies upon the Declaration of Dr. Gregory F. Welch (Ex. 1010) to support its position.

Liebenow describes an electronic hand-held information appliance having a display disposed on a first surface and an input device disposed on a second surface opposed to the first surface for inputting information. Ex. 1003, Abstract. Figure 1 of Liebenow is reproduced below.

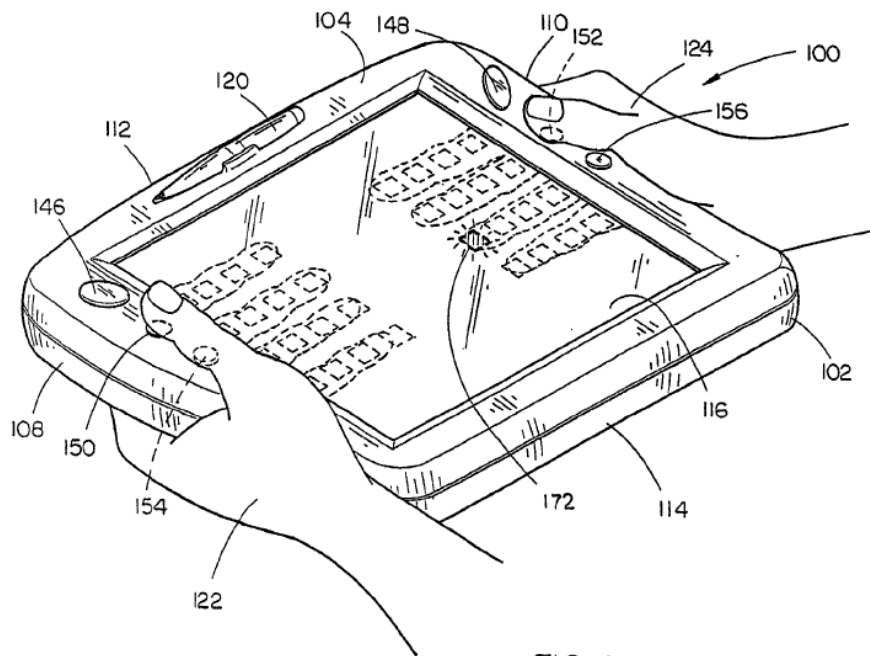


FIG. 1

As shown in Figure 1 of Liebenow, digital information appliance 100 is sized and shaped to be held by a user in both hands. Housing 102 includes front surface 104 and back surface. *Id.* ¶ 25. One or more function keys

such as 150, 152, and 154 may be mounted on front surface 104. Display 116 may be a touch-screen for touch or pen input of information and data. *Id.* ¶¶ 26, 33. Figure 5 of Liebenow is reproduced below.

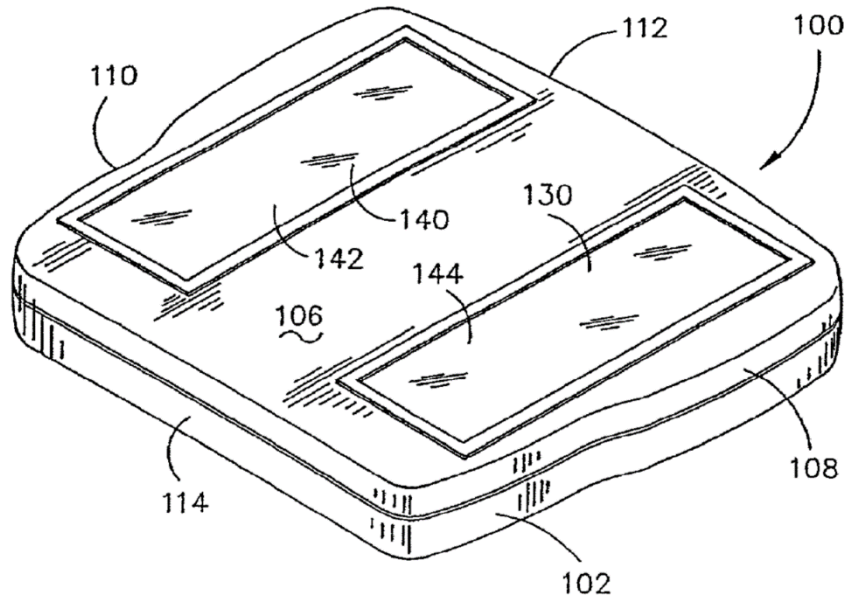


FIG. 5

As shown in Figure 5, back surface may be comprised of one or more touch sensitive panels 140. *Id.* ¶¶ 13, 36. Areas of panel 140 may be defined as keys of a keyboard (emulated as an electromechanical keyboard seen in Figure 2) so that a user touching the panel within such an area would accomplish actuation of a key. *Id.* In particular, panel 140 may be divided into left and right key ranges 142 and 144, such that fingers of a user's left and right hands may be positioned over the touch sensitive panel to be in position for typing. Various key configurations may be defined as desired

by the user or as required by the applications executed by the digital information appliance. *Id.*

Liebenow further describes, in connection with the hand-held device, a processing system 502 that includes a central processing unit such as a microprocessor or microcontroller for executing programs, performing data manipulations, and controlling tasks of the hand-held device. *Id.* ¶¶ 21, 56, Fig. 13.

Andrews describes a hand-held game system that maps input elements to specific game application functions. Ex. 1004, 6:10–14, 9:11–15.

We begin our analysis with whether Andrews is analogous art. Patent Owner argues that Andrews is not analogous art because it is neither in the same field of endeavor as the '245 patent nor reasonably pertinent to the particular problem addressed by the '245 inventors. PO Resp. 12. We are not persuaded by Patent Owner's arguments.

The test for determining whether a prior art reference constitutes analogous art to the claimed invention is: (1) whether the prior art is from the same field of endeavor, regardless of the problem addressed, or (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved. *See In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004).

Patent Owner conflates the two prong test, essentially only addressing whether Andrews is reasonably pertinent to the particular problem with which the inventors of the '245 patent were involved. *See, e.g.*, PO Resp. 12 ("Andrews and the '245 patent do not share the same field of endeavor [because Andrews] addresses a very different problem."); Ex. 2005 ¶ 85

(Mr. Lim arriving at the field of endeavor for the prior art reference and the invention by looking at the problems solved by each). Such a showing is insufficient, because if the prior art reference is in the same field of endeavor, the test is satisfied, regardless of whether the prior art reference addresses the same problem identified by the inventors.

In determining the field of endeavor, we look to the '245 patent's written description and claims, including the structure and function of the invention. *Bigio*, 381 F.3d at 1326. And, we agree with Petitioner that in defining the field of invention, and in determining the relevance of Andrews to the obviousness inquiry, here a broad approach should be taken. Pet. Reply 5. Indeed, the Supreme Court provided guidance in determining the applicability of a reference's teachings in an obviousness inquiry. In *KSR Int'l Co. v. Teleflex Inc.*, the Court explained that if a feature has been used to improve one device, and a person of ordinary skill in the art would have recognized that it would improve a similar device in that field or another, implementing that feature on the similar device is likely obvious. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007).

Here, the appropriate scope of the field of endeavor is hand-held devices with one or more input elements. Ex. 1001, 1:13–19, claims 1 and 12. Andrews is within the field of endeavor because it describes hand-held electronic devices, such as game controllers, with one or more input elements associated with various game controls. Ex. 1004, Title, Abstract, 1:10–13. Moreover, we disagree with Patent Owner that Andrews is not relevant because it is directed to peripheral devices. PO Resp. 26. Peripheral devices, such as the described game controller in Andrews, are

within the field of endeavor set forth in the '245 patent. Ex. 1001, 1:13–19, 3:37–46.

Because we find that Andrews is from the same field of endeavor as the claimed invention and provides relevant teachings to a person of ordinary skill in the art at the time of the invention, we need not consider Patent Owner's arguments regarding whether Andrews is reasonably pertinent to the particular problem with which the inventors are involved.

*Claims 1, 7, 10–12, 17, and 20*⁶

Claim 1 is similar in scope to independent claim 12. The parties argue these claims collectively, choosing claim 1 as representative. *See, e.g.*, Pet. 22; PO Resp. 29. Accordingly, the following discussion with respect to claim 1 equally applies to claim 12.

Claim 1 requires a hand-held device comprising a processor configured to process a selected application having two or more functions. Ex. 1001, 15:28–30. For these limitations, Petitioner contends that Liebenow discloses a hand-held device (Liebenow appliance 100) including

⁶ Patent Owner argues that we should not rely on Petitioner's anticipation arguments to evaluate obviousness, but that we should observe that no evidence has been presented about how any proposed combination of prior art references renders obvious claims 1, 7, 10-12, 17 and 20. PO Resp. 5. We decline to do so. Although Petitioner alleges these claims are unpatentable as obvious, yet appears to present a case of anticipation, we determine that such a presentation is not a basis for dismissing the petition. It is axiomatic patent law that a disclosure that anticipates under 35 U.S.C. § 102 also may render the claim unpatentable under 35 U.S.C. § 103, because anticipation is the epitome of obviousness. *See In re McDaniel*, 293 F.3d 1379, 1385 (Fed. Cir. 2002) ("It is well settled that 'anticipation is the epitome of obviousness.'") (quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)).

a processor (Liebenow microprocessor of processing system 502) configured to process a selected application (Liebenow word processing application) having two or more functions (“Space Bar,” “Ctrl,” “Alt,” and “Shift” functions). Pet. 12 (citing Ex. 1003 ¶¶ 25, 33, 56, 69, Figs. 1, 8, 16). We are persuaded by Petitioner’s showing, which we adopt as our own, that Liebenow discloses a hand-held device including a processor configured to process a selected application having two or more functions.

Petitioner also contends that Liebenow describes a first surface (front surface 104 seen above) including a first input element (e.g., 146, 148, 150, etc.) mapped to at least a first function (“Space Bar,” “Ctrl,” “alt,” and “Shift” functions) of the selected application (word processing application) as recited per claim 1. Pet. 13–14. Patent Owner disagrees that Liebenow discloses a first input element mapped to at least a first function *of the selected application* as required by claim 1. PO Resp. 29. In particular, Patent Owner argues that one skilled in the art would not have considered the Liebenow Space Bar, Ctrl, Alt, and Shift keys to be “of” a selected application (word processing application), because the function of such keys are defined at the device or operating system level, and not at the application level. *Id.* We have considered the testimony to which we are directed in that regard. PO Resp. 29; Ex. 2003 ¶¶ 59–61. Dr. MacLean’s testimony, however, is based on her “view” that “of a selected application” indicates that mapping is specified at the level of the application and not at the device or operating system level, resulting in different applications having different mappings. Ex. 2003 ¶ 57. However, neither Patent Owner nor Dr. MacLean explain sufficiently why we should construe claim 1 that way. In particular, there is nothing in claim 1 that suggests how the mapping is specified, much

less that the mapping is specified at the level of the application and not at the device or operating system level resulting in different applications having different mappings as asserted. The argument, and Dr. MacLean's testimony in support of the argument, are not commensurate in scope with the language of claim 1, and in any event are conclusory, not supported by record evidence.

For example, Patent Owner has not directed us to where in the '245 patent, "of the selected application" requires us to read into the claim that mapping is specified at the level of the application and not at the device or operating system level. The portion of the Specification of the '245 patent to which the parties direct our attention (PO Resp. 30; Pet. Reply 14) describes that the mapping of input elements to particular input functions for a given software application "*may* be customized by the application developer or the user through downloads or other programming modalities." Ex. 1001, 8:13–18 (emphasis added). We disagree with Patent Owner that this passage would have indicated to a person of ordinary skill in the art that the selected application must be customized at the application level. The language "*may*" recited in the Specification of the '245 patent (*id.*) is not a special definition; rather, it is permissive such that the software application "*may* be customized." A person of ordinary skill in the art would have understood that the functionality of the selected application may be programmed at the application level or when the hand-held device is manufactured, for example, at the device or operating system level. In any event, as noted above, the claim language does not include any specificity with respect to when or how the device is customized. Based on the record before us, Petitioner has shown by a preponderance of the evidence that

Liebenow describes a first input element mapped to at least a first function of the selected application.

Petitioner further contends with respect to claim 1 that Liebenow discloses a second surface (Liebenow back surface 106) including at least a second input element (back-surface input device 130) having a sensor pad (touch sensitive panels 140). Pet. 14. Petitioner further contends that the sensor pad includes a selectively configurable sensing surface that provides more than one delineated active area based on the selected application (e.g., Liebenow Fig. 15), where the first active area is mapped to a second function of the application (Fig. 15 input of the “B” character) and a second active area is mapped to a third function of the application (Fig. 15 input of the “Y” character). As Petitioner explains, the key layouts in Liebenow change based on the selected application or may be uniquely configured by the user (e.g., selectively configurable based on the selected application), directing attention to the examples shown in Figures 15 and 16 of a key layout for a word processing application (Fig. 15) which is different than the key layout for the calculator application (Fig. 16). *Id.* at 14–18; Ex. 1003 ¶ 36.

Patent Owner argues that Liebenow does not show that a single selected application has different functions of the selected application mapped to first and second-surface input elements. PO Resp. 31–33. This argument is similar to the one previously discussed, because Patent Owner argues that Liebenow does not describe that the “Space Bar,” “Ctrl,” “Alt,” and “Shift” functions are associated with the word-processing application, because these functions are defined at the device or operating-system level and not at the application level. *Id.* at 32. We do not find Patent Owner’s

arguments persuasive for at least the reasons already discussed. Claim 1 does not require defining keys or functions at any level, much less at the application level. Implicit in Patent Owner's argument is that Liebenow does not describe using the keys on the front of the hand held device in connection with the described word processing application with respect to the back of the hand held device. *Id.*, Ex. 2003 ¶ 76. Patent Owner's argument, and Dr. MacLean's testimony in that regard, are not commensurate in scope with the teachings of Liebenow and how a person of ordinary skill in the art would have read Liebenow.

A person of ordinary skill in the art would understand Liebenow to describe that the keys on the hand held device may correspond to the keys of a conventional QWERTY keyboard such as the "space bar" on the front of the device (Ex. 1003, keys 146 and 148 of Figs. 1, 3, and 4, ¶ 33) and the letter keys on the back of the device (Ex. 1003, Fig. 15) used in word processing application. Ex. 1003 ¶¶ 33, 69; Pet. 12–18. The space bar on the front of the device, letters controlled by the left hand on the back of the device, and letters controlled by the right hand on the back of the device are each functions of the selected application. Ex. 1040, 188:21–189:2, 203:24–204:12 (Patent Owner's expert testifying that a key in a word processing application can be considered a function of an application and that different character inputs or keys would be different functions of an application).

Patent Owner also argues that Liebenow does not describe a *selectively configurable* sensing surface that provides more than one delineated active area based on the selected application. PO Resp. 33–34. Petitioner contends that Liebenow's key layouts change based on the selected application or may be uniquely configured by the user, explaining

that the key layout for the word processing application (Ex. 1003, Fig. 15) is different than the key layout for the calculator application (Ex. 1003, Fig. 16). Pet. 14–16; citing Ex. 1003 ¶¶ 36, 44, 66. Patent Owner acknowledges that “Liebenow teaches selection of predefined keyboards” and that “[d]ifferent keyboards can be pre-defined by the system and then selected and designated for use by a particular application,” but argues that such teachings do not meet the claim language because such emulated keyboards would be specified at the device or operating-system level and not at the application level. PO Resp. 33–34.

Claim 1 does not require that the sensing surface that provides more than one delineated active area based on the selected application be selectively configurable at the application level as opposed to at the operating system or device level or that the delineations themselves are defined by the application (e.g., that the shape of the keypad, for example, be different for each different application) as argued. PO Resp. 35. These features are not recited in claim 1. Liebenow describes, for example, that the keys on the back of the hand held device may emulate a QWERTY keyboard, a Dvorak key configuration, non-English language key configuration, numeric keypad configuration, a telephone keypad configuration, or a user or application specified key configuration. Ex. 1003 ¶ 37; Tr. 12–14. Patent Owner has not shown sufficiently why such a description—one that Petitioner relies on in its Petition—does not meet the selectively configurable limitation. Based on the record before us, Petitioner has shown by a preponderance of the evidence that Liebenow describes a selectively configurable sensing surface that provides more than one delineated active area based on the selected application.

For claims 7, 10, 11, 17, and 20, each of which depends directly from either claim 1 or independent claim 12, Petitioner relies on Liebenow to meet the additional limitations of those claims. Pet. 28–29, 30. We agree with Petitioner’s showing, which we adopt as our own, that Liebenow discloses the additional limitations of claims 7, 10, 11, 17, and 20. Patent Owner does not argue these claims separately. PO Resp. 41.

Claims 2–5 and 13–15

Claim 2 depends directly from claim 1 and includes “wherein the selected application comprises a game application.” Ex. 1001, 15:44–45. Claim 13, which depends from independent claim 12, is similar. Petitioner relies on Andrews in combination with Liebenow to meet the limitations of claims 2 and 13. In particular, Petitioner relies on Andrews for its description of a hand-held game device with a plurality of game applications. Pet. 26. Petitioner argues that a person having ordinary skill in the art at the time of the invention would have appreciated that the hand-held device of Liebenow could also include a game application as taught by Andrews. *Id.* at 25, citing Ex. 1010 ¶¶ 38–40. Petitioner also argues, with supporting evidence, that both Andrews and Liebenow teach mapping input elements of a hand-held electronic device to the functions of a specific application, and that incorporating a game application in the Liebenow device would have yielded predictable results and increased desirability of the device due to increased function of the device. *Id.*

Patent Owner argues that Liebenow and Andrews do not disclose claims 2 and 13. PO Resp. 36–38. In essence, Patent Owner argues that neither Liebenow nor Andrews alone teaches all of the limitations of claims 2 and 13. *See, e.g.*, PO Resp. 37–38 (arguing that there is no “teaching to

map an input element on a first surface to a first game application function and two different delineated active areas on a second surface to respective different functions of the same game application.”). However, one cannot show nonobviousness “by attacking references individually” where the rejections are based on combinations of references. *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (citing *In re Keller*, 642 F.2d 413, 426 (CCPA 1981)). In this case, such arguments are not sufficient to rebut Petitioner’s showing that the *combination* of Liebenow and Andrews describes all of the claimed features of claims 2 and 13.

We also have considered Patent Owner’s arguments regarding why there would be no reason to combine Liebenow and Andrews. PO Resp. 22–29. As explained above, Petitioner articulates a reasonable rationale with supporting evidence for combining Liebenow and Andrews. We are not persuaded by Patent Owner’s arguments that adding more functionality (e.g., games) to Liebenow’s hand-held device would not have been desirable. *Id.* at 22–23. In support of its argument, Patent Owner relies on the testimony of Mr. Lim, Dr. MacLean, and a 1997 article to show that at the time of the invention, hand-held devices were simplistic, user-friendly devices that performed well. *Id.* at 23. However, Patent Owner does not explain, with supporting evidence, what features made such prior art devices simplistic, user-friendly, and well performing. Without something more, we will not speculate that the hand held devices at the time of the invention were simplistic, user-friendly and performed well because they did not include more than one application to run on the device, such as a gaming application. In any event, even Patent Owner’s expert, Dr. MacLean

acknowledged, during cross examination that at the time of the invention games were available for hand held devices. Ex. 1040, 24.

Patent Owner also argues that since Liebenow is a data-entry-focused business device, not designed for the general consumer, a person of ordinary skill in the art would not have been motivated to add distracting games to it. PO Resp. 24–25. However, Patent Owner has not directed attention to where Liebenow describes the device in such a limited capacity. Mr. Lim’s testimony also is not supported by what Liebenow describes. Indeed, Liebenow describes the state of the art and indicates that compact digital information appliances are becoming increasingly common fixtures of everyday life. Ex. 1003 ¶ 3. A person of ordinary skill in the art at the time of the invention would have understood that Liebenow could be used in everyday life, e.g., by general consumers and was not limited to corporate use.

We also are not persuaded by Patent Owner’s arguments that adding a game application to Liebenow’s hand held device would have required much more than minor modifications to software. PO Resp. 26–29. Patent Owner’s arguments regarding the difficulties a person of ordinary skill in the art would have encountered are narrowly based on incorporating physically all technicalities of Andrews into Liebenow. *See, e.g.*, PO Resp. 28. The test for obviousness is what the combined teachings of the references would have suggested to a person of ordinary skill in the art, not whether one reference may be bodily incorporated into the structure of another reference. *Keller*, 642 F.2d at 413. To the extent that Patent Owner is suggesting that the combination would be beyond the skill set of a person of ordinary skill in the art, the ’245 patent itself tends to belie such a notion. Ex. 1001, 5:46–56.

There is no specificity in the '245 patent Specification explaining what kind of software should be used or how the software should be written. Rather, the inventors of the '245 patent indicate that a person of ordinary skill in the art, such as a software developer, would have been able to ascertain how to customize the software applications for games. *Id.*

We have considered Patent Owner's argument that one of ordinary skill in the art would not have added a gaming application to Liebenow's device because using different delineated active areas on a rear touchpad for different game functions would not have been familiar to one of ordinary skill in the art. Patent Owner instead contends a person of ordinary skill in the art would have at best only utilized the front portion of the Liebenow device to play games. *Id.* at 39 (citing Ex. 2005 ¶¶ 109–112, 131). We have considered the evidence in support of Patent Owner's arguments, but do not give such evidence much weight. Mr. Lim's testimony is based on what Liebenow alone and what Andrews alone teach and not on the combination as a whole. For example, Mr. Lim testifies as follows:

109. Liebenow teaches a touchpad for text input, and Andrews teaches a drawing pad for CAD. However, neither Liebenow nor Andrews teaches using a touchpad to play games. Hence, Andrews' game software in a Liebenow appliance will not utilize the touchpad for game applications as taught by the '245 Patent.

110. Andrews' game applications will not utilize the second-surface touchpad as taught by the '245 Patent. Liebenow does not teach game applications on his appliance, and Andrews does not teach using the second surface or a touchpad to play games. On the other hand, the '245 Patent teaches using the first and second surface of a handheld device to play games.

Ex. 2005 ¶¶ 109–110.

The above testimony is demonstrative of Mr. Lim's narrow focus on the individual teachings and not on what the combined teachings would have conveyed to a person of ordinary skill in the art. Therefore, we give little weight to such testimony.

Lastly, Patent Owner's argument that Andrews teaches away from using a touchpad in games because Andrews' sensor pad is mapped to a CAD genre rather than a game genre is not persuasive. PO Resp. 40–41 (citing Ex. 2005 ¶¶ 90–92). A reference does not teach away if it merely expresses a general preference for an alternative invention but does not “criticize, discredit, or otherwise discourage” investigation into the invention claimed. *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). Here, Patent Owner has not shown sufficiently that Andrews discourages using a touchpad for games.

In summary, we have considered all of Patent Owner's arguments and are not persuaded by any of Patent Owner's arguments that it would not have been obvious to a person of ordinary skill in the art at the time of the invention to combine Liebenow and Andrews. Liebenow describes a hand-held device with input elements and an application as claimed. Andrews describes a gaming application. We are persuaded by a preponderance of the evidence that modifying the Liebenow hand-held device to include specifically a gaming application would have been within the level of a person of ordinary skill in the art. Moreover, as explained by Petitioner, adding game applications to the Liebenow device would have increased the functionality and desirability of the hand held device. A person with ordinary skill in the art is “a person of ordinary creativity, not an

automaton,” and “in many cases . . . will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *KSR*, 550 U.S. at 420–21.

For claims 3–5, 14, and 15, each of which depends indirectly from either claim 1 or independent claim 12, Petitioner relies on Andrews to meet the additional limitations of those claims and provides reasons for combining Liebenow with Andrews for these claims. Pet. 25–27. We agree with Petitioner’s showing, and adopt it as our own, that Andrews in combination with Liebenow meets the limitations of claims 3–5, 14, and 15. Moreover, we determine that Petitioner’s rationale for combining Liebenow and Andrews is reasonable. Patent Owner does not argue these claims separately. PO Resp. 41.

D. Obviousness Over Liebenow and Hedberg

Petitioner contends that claims 8, 9, and 17–19 are unpatentable under 35 U.S.C. § 103 based on Liebenow and Hedberg. Pet. 28. To support its contentions, Petitioner provides a detailed showing mapping limitations of claims 8, 9, and 17–19 to structures described by Liebenow and Hedberg. *Id.* at 22–23, 28–30. Petitioner also relies upon the Declaration of Dr. Gregory F. Welch (Ex. 1010) to support its position.

Hedberg describes a hand-held display device that includes control buttons 3 on the display connected to control circuits and a gyroscope 6 incorporated in the display device and connected to the control circuits. Ex. 1005, Abstract. The display device is responsive to movements in the space for displaying an image in different magnification and/or in different parts. *Id.* Hedberg describes that an equilibrium of force accelerometer may be used in place of the gyroscope. *Id.* at 3:26–32.

Each of claims 8 and 9 depend directly from claim 1. Claim 18 depends directly from independent claim 12 and claim 19 depends directly from dependent claim 17, which itself depends directly from claim 12. Claim 8 recites that the hand-held device includes an accelerometer. Claim 9 recites that the hand-held device includes a gyroscope. Each of claims 18 and 19 recites that the hand-held device includes an accelerometer or gyroscope.

Petitioner relies on Hedberg for its description of a gyroscope or accelerometer included in a hand-held device. Pet. 28–30. Petitioner concludes that one of ordinary skill in the art would have recognized that the addition of a gyroscope and/or an accelerometer would have increased the ability to control the Liebenow hand-held device. Pet. 28; Ex. 1010 ¶¶ 42–43.

We begin our analysis with whether Hedberg is analogous art. Patent Owner argues that Hedberg is not analogous art because it is neither in the same field of endeavor as the '245 patent nor reasonably pertinent to the particular problem addressed by the '245 inventors. PO Resp. 16. We have considered Patent Owner's arguments, but do not find them persuasive.

As it did with respect to its arguments that Andrews is not analogous art, Patent Owner conflates the two prong analogous art test. In defining the field of invention of the '245 patent, Patent Owner looks to the problems solved by the inventors and argues that the field of endeavor is ergonomic and versatile data input on a hand-held device. *Id.* at 16, 18. Such a showing is insufficient to establish the field of endeavor. As explained above in Part II.C., we determine that the field of endeavor is hand-held

devices with one or more input elements. Ex. 1001, 1:13–19, claims 1 and 12.

Patent Owner characterizes Hedberg as being in the field of viewing or displaying systems. PO Resp. 17–18. But in arriving at that description, Patent Owner too narrowly characterizes the Hedberg invention. Hedberg is within the field of endeavor because it describes hand-held electronic devices, with one or more input elements. Ex. 1005, Title, 6:34–7:7, 7:15–20, Fig. 5, claim 1.

Because we find that Hedberg is within the same field of endeavor as the claimed invention, we need not consider Patent Owner’s arguments regarding whether Hedberg is reasonably pertinent to the particular problem with which the inventors are involved. PO Resp. 18–19.

Patent Owner argues that Hedberg does not disclose a gyroscope as recited in claim 9. PO Resp. 43–44. However, Hedberg clearly does so, because in the Abstract, there is a description of a gyroscope incorporated in the hand-held display device. Ex. 1005, Abstract. Patent Owner does not address this description, and, therefore, we determine its arguments are not persuasive to show that Hedberg does not describe a gyroscope. In addition, during cross examination, Patent Owner’s witness, Dr. MacLean acknowledged that the Hedberg gyroscope described in the Abstract would satisfy the claim 9 requirements. Ex. 1040, 112.

We have considered Patent Owner’s arguments regarding why Liebenow and Hedberg should not be combined. PO Resp. 41–43. The arguments are not persuasive. In particular, Patent Owner argues that Hedberg focuses on displaying and viewing on an electronic device and is not concerned with data entry on an electronic device. PO Resp. 41–43. As

such, Patent Owner argues, one would not want to incorporate the displaying and viewing teachings of Hedberg into the Liebenow data entry device. *Id.* Patent Owner, and Patent Owner's expert Dr. McLean, focus too narrowly on the strict disclosures of the references and why the physical embodiments of the references could not be combined. *See, e.g.*, Ex. 2003 ¶ 112. Patent Owner's arguments are not persuasive for the same reasons provided already regarding Patent Owner's misapplication of the law on obviousness based on bodily incorporation. Based on the record before us, and weighing the evidence, we give substantial weight to Dr. Welch's testimony that use of inertial sensors such as gyroscopes and accelerometers in handheld devices to enable device motion as input was known at the time of the invention and that using such sensors to control the display of a hand held device would increase the usability of the device. Ex. 1010 ¶¶ 33, 43–44; Ex. 1020, 639–640. We agree with Petitioner's showing, which we adopt as our own, that Liebenow in combination with Hedberg discloses a gyroscope or accelerometer as claimed in claims 8, 9, and 17–19 and that adding a gyroscope or accelerometer to the Liebenow device would have been desirable for the reasons provided by Petitioner. Patent Owner does not argue for the separate patentability of claims 8 and 17–19.

E. Obviousness Over Liebenow and Martin

Petitioner contends that claim 6 is unpatentable under 35 U.S.C. § 103 based on Liebenow and Martin. Pet. 30–32. To support its contentions, Petitioner provides a detailed showing mapping limitations of claim 6 to structures described by Liebenow and Martin. *Id.* Petitioner also relies upon the Declaration of Dr. Gregory F. Welch (Ex. 1010) to support its position.

Martin describes a hand-held device with a display, a plurality of buttons, and a 5-way directional pad for navigation within the various interfaces displayed on the hand-held device. Ex. 1006, 18:43–50.

Claim 6 depends directly from claim 1 and recites that the second surface further includes a directional pad. Petitioner relies on Martin for a description of a hand-held display with a directional pad. Pet. 31–32. Petitioner concludes it would have been obvious to a person having ordinary skill in the art to replace Liebenow’s cursor control device on the back surface of Liebenow’s hand-held device with a directional pad as described by Martin in order to manipulate the cursor up, down, left, and right. *Id.* at 31; Ex. 1010 ¶¶ 44–47.

Patent Owner argues that Liebenow does not illustrate back-surface cursor-control devices in the context of an embodiment with a touch panel, and, therefore, the substitution proposed by Petitioner would result in a device that lacked any back-surface sensor pad. PO Resp. 48–49. This argument is not persuasive because Liebenow does describe a back-surface cursor-control device in an embodiment with a touch panel. In particular, and in the context of Figure 11, Liebenow shows a cursor control device 326 on the back surface that is a touch sensitive panel along with an input device 320 on the back surface that may be a touch sensitive panel. Ex. 1003 ¶ 48.

Patent Owner argues that the combination of Liebenow and Martin would not have been desirable because, for example, a directional pad would take up more space, cost more, would not integrate in a keyboard without disrupting its layout, and would offer less effective cursor control in diagonal directions. PO Resp. 45–48. We do not give much weight to the testimony to which we are directed in support of these arguments, because

such testimony is either conclusory or focused on physically combining the references without consideration of the skill set of a person of ordinary skill in the art. For example, Dr. MacLean opines that because Martin's directional pad (d-pad) is on the front of Martin's device, one would not put it on the back of Liebenow's device because it would not be a simple substitution, and placing d-pads on back surfaces is uncommon. Ex. 2003 ¶ 149. Neither Patent Owner nor Dr. MacLean provide evidence in support of such statements. Dr. MacLean does not explain why putting a d-pad on the back of a hand-held device as opposed to on the front of such a device would be beyond the skill set of a person of ordinary skill in the art. Moreover, Patent Owner (and Dr. MacLean) are of the apparent perception that bodily incorporation is required to make a substitution of one thing for the other. But that is not the case. *Keller*, 642 F.2d at 413. Here, the replacement of Liebenow's cursor on the back of its device with a d-pad like the one shown in Martin would have been obvious to a person of ordinary skill in the art at the time of the invention. This is a matter of replacing one known thing for another.

For these reasons, we agree with Petitioner's showing, and adopt it as our own, that Liebenow in combination with Martin disclose a directional pad and that adding a directional pad to the Liebenow device would have been desirable for the reasons provided by Petitioner.

F. Obviousness Over Liebenow and Griffin

Petitioner contends that claim 16 is unpatentable under 35 U.S.C. § 103 over the combination of Griffin and Liebenow. Pet. 32. To support its contentions, Petitioner provides a detailed showing mapping limitations of claim 16 to structures described by Griffin and Liebenow. *Id.* Petitioner

also relies upon the Declaration of Dr. Gregory F. Welch (Ex. 1010) to support its position.

Griffin describes a hand-held electronic device with a display, a plurality of buttons, and a thumbwheel on the front surface and function keys on the back surface. Ex. 1007 ¶ 30.

Claim 16 depends directly from claim 1 and recites that the input element comprises a rotary sensor or a directional pad. Petitioner relies on Griffin for at least its description of a hand-held electronic device with a thumbwheel on the front surface. Pet. 32, 40–41. Petitioner concludes it would have been obvious to a person having ordinary skill in the art to include the touch sensor keys of Liebenow on the device of Griffin, having the rotary thumbwheel on the front, as a simple substitution of one known element for another known element. *Id.* at 34; Ex. 1010 ¶¶ 48–51.

Patent Owner argues that Griffin has no teaching of providing different numbers or functions of back-surface buttons for different situations or for different applications and are not selectively configured based on the application. PO Resp. 54. Claim 16 does not require providing different numbers or functions of back-surface buttons for different situations or for different applications, and, thus, the argument is not commensurate with the language of claims 12 and 16. In any event, such a conclusory argument, without more, does not sufficiently rebut Petitioner's showing in the Petition that Griffin describes input elements that provide data entry functions required by different applications, such as e-mail and address book applications. Pet. 32–33.

We also are not persuaded by Patent Owner's argument that one of ordinary skill in the art would not have wanted touch sensors on the back of

Griffin because the user would no longer be able to determine where the buttons are located, or the size of Liebenow's device would discourage including touch pad sensors on the back of Griffin. PO Resp. 52–53.

Petitioner does not propose adding more buttons or function to the back of Griffin. Petitioner proposes replacing the hard keys on the back of Griffin with touch sensors like those taught by Liebenow. Pet. 33–34; Pet. Reply 21. The number of keys would remain the same. Accordingly, the combination would result in two, or four at the most, touchpad sensors each associated with one function on the back and, thus, would not require much to know the locations of such pads for the corresponding function—as even recognized by Griffin itself. Ex. 1007 ¶¶ 56–58. Patent Owner's arguments with respect to sizes and uses of the Griffin and Liebenow devices are based on bodily incorporation. PO Resp. 49–52. We have considered these arguments and determine them to be unpersuasive.

Lastly, Patent Owner argues that because Liebenow's device includes the “Shift” and “Alt” keys on the front of its device, it would not have been obvious to make the Griffin “Shift” and “Alt” keys located on the back of Griffin touch pad sensors. PO Resp. 54. This argument is not persuasive for the same reasons provided already regarding Patent Owner's misapplication of the law on obviousness based on bodily incorporation.

For these reasons, we agree with Petitioner's showing, which we adopt as our own, that Griffin in combination with Liebenow discloses the limitations of claim 16 and that replacing Griffin's hard keys with Liebenow's touch sensors on the back of Griffin's device would have been desirable for the reasons provided by Petitioner.

G. Objective Evidence of Nonobviousness

Factual inquiries for an obviousness determination include secondary considerations based on evaluation and crediting of objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

Notwithstanding what the teachings of the prior art would have suggested to a person of ordinary skill in the art at the time of the claimed invention, the totality of evidence submitted, including objective evidence of nonobviousness, may lead to a conclusion that the claimed invention would not have been obvious to one with ordinary skill in the art. *In re Piasecki*, 745 F.2d 1468, 1471–1472 (Fed. Cir. 1984). Secondary considerations may include any of the following: long-felt but unresolved needs, failure of others, unexpected results, commercial success, copying, licensing, and praise.

There must be a demonstrated “nexus” between the merits of the claimed invention and the evidence of secondary considerations before that evidence is accorded substantial weight in an obviousness determination. *Simmons Fastener Corp. v. Illinois Tool Works, Inc.*, 739 F.2d 1573, 1575 (Fed. Cir. 1984); *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1539 (Fed. Cir. 1983); *see also In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996); *In re Fielder*, 471 F.2d 640, 642 (CCPA 1973). “Nexus” is a legally and factually sufficient connection between the objective evidence and the claimed invention, such that the objective evidence should be considered in determining nonobviousness. *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988). In the absence of an established nexus with the claimed invention, secondary consideration factors such as commercial success, satisfaction of a long-felt but unresolved need,

licensing and copying by others are not entitled to much, if any, weight and generally have no bearing on the legal issue of obviousness. *See In re Vamco Machine & Tool, Inc.*, 752 F.2d 1564, 1577 (Fed. Cir. 1985).

The burden of showing that there is a nexus lies with the Patent Owner. *Id.*; *see In re Paulsen*, 30 F.3d 1475, 1482 (Fed. Cir. 1994).

Patent Owner argues that secondary considerations show that the '245 patent claims are not obvious. PO Resp. 55–59. In particular, Patent Owner argues that Petitioner has not pointed to a prior art reference meeting the limitations of the challenged claims. *Id.* at 56–57. Patent Owner's argument is misplaced insofar as an inquiry into secondary considerations is concerned, and in any event, has been addressed. As explained above, Liebenow in combination with Andrews, Hedberg, Martin, or Griffin meet the limitations of the challenged claims.

Patent Owner also argues that both mixed-use hand-held game devices and hand-held game devices utilizing touch technology failed prior to the time of the invention of the '245 patent. *Id.* at 58–59. In particular, Patent Owner argues that in 2003, Nokia made a mobile phone hand-held device with gaming capability, but the product was a failure. *Id.* at 59. Patent Owner also argues that Sega and Tiger Games made devices that were either not released commercially or were commercial failures. *Id.* (citing Ex. 2005 ¶ 52). Patent Owner does not explain sufficiently why the products were commercial failures or why they were not released commercially, and in any event, why such events are even relevant to the inquiry. The products were made, thus, demonstrating that others were able to make the products and did not fail trying to do so. That the products were

not commercially successful or were not released commercially has not been shown to be particularly relevant to the secondary considerations inquiry.

Patent Owner also argues that it was not until after the claimed invention that a hand-held gaming device with a touchscreen, the Nintendo DS, was commercially successful. *Id.* at 59 (citing Ex. 2005 ¶ 53). To the extent that Patent Owner is asserting copying, Patent Owner fails to show a nexus between the claimed invention and the alleged copied device, the Nintendo DS. Patent Owner has not presented sufficient evidence that the Nintendo DS is a commercial embodiment of the invention disclosed in the claims.

Conclusion

We have considered the entirety of the evidence before us, including the evidence of obviousness and the evidence of failure of others and copying submitted by Patent Owner as indicia of nonobviousness. On balance, the evidence of obviousness outweighs the evidence of nonobviousness, with respect to the challenged claims. The evidence of obviousness is strong and the evidence of nonobviousness is weak, for the reasons discussed above. All of Patent Owner's arguments have been considered. Petitioner has proved, by a preponderance of the evidence that claims 1–5, 7, 10–15, 17, and 20 are unpatentable over the combination of Liebenow and Andrews; claims 8, 9, and 17–19 are unpatentable over the combination of Liebenow and Hedberg; claim 6 is unpatentable over Liebenow and Martin; and claim 16 is unpatentable over the combination of Griffin and Liebenow.

III. CONCLUSION

Based on the evidence and arguments, Petitioner has demonstrated by a preponderance of the evidence that claims 1–5, 7, 10–15, 17, and 20 of the '245 patent are unpatentable under 35 U.S.C. § 103(a) as obvious over Liebenow and Andrews; claims 8, 9, and 17–19 are unpatentable under 35 U.S.C. § 103(a) as obvious over Liebenow and Hedberg; claim 6 is unpatentable under 35 U.S.C. § 103(a) as obvious over Liebenow and Martin; and claim 16 is unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Griffin and Liebenow.

IV. ORDER

In consideration of the foregoing, it is
ORDERED that claims 1–20 of the '245 patent are held unpatentable;
and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2015-00230
Patent 7,463,245 B2

For Petitioner:

Eric A. Buresh
Abran J. Kean
ERISE IP, P.A.
eric.buresh@eriseip.com
abran.kean@eriseip.com

For Patent Owner:

Michael Mauriel
Sherman W. Kahn
MAURIEL KAPOUYTIAN WOODS LLP
mmauriel@mkwllp.com
skahn@mkwllp.com

Robert J. Gilbertson
Sybil L. Dunlop
X. Kevin Zhao
GREENE ESPEL PLLP
bgilbertson@greeneespel.com
sgunlop@greeneespel.com
kzhao@greeneespel.com