

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

PAUL PONIATOWSKI,
Patent Owner.

IPR2024-00731
Patent 8,270,578 B2

Before FRANCES L. IPPOLITO, NORMAN H. BEAMER, and
BACH V. HOANG, *Administrative Patent Judges*.

BEAMER, *Administrative Patent Judge*.

DECISION
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

A. Background and Summary

Paul Poniatowski (“Patent Owner”) is the owner of U.S. Patent No. 8,270,578 B2 (“the ’578 patent”). Ex. 1001. Apple Inc. (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–6, 8–13, 15–20, and 22–27 of the ’578 patent. Paper 1 (“Pet.”). We instituted *inter partes* review of all the claims as challenged in the Petition. Paper 5 (“Inst. Dec.”). Patent Owner filed a Patent Owner Response to the Petition. Paper 11 (“PO Resp.”).¹ Petitioner filed a Reply. Paper 12 (“Reply”). Patent Owner filed a “Reply To The Petitioner” — *i.e.*, a Sur-Reply. Paper 17 (“PO Sur-Reply”). We did not hold an oral hearing in this case. *See* Paper 16.

We have jurisdiction over this *inter partes* review under 35. U.S.C. § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a). Based on the complete record, we find that Petitioner has shown, by a preponderance of the evidence, that claims 1–6, 8–13, 15–20, and 22–27 of the ’578 patent are unpatentable.

B. Related Matters

The parties indicate that Patent Owner asserted the ’578 patent in *Poniatowski v. Apple Inc.*, Case No. 6:23-cv-00316 (W.D. Tex.), which was “since dismissed without prejudice for improper service.” Pet. 66; *see also* Paper 10, 2.

¹ Patent Owner is proceeding *pro se*. *See* Paper 10 (filed October 28, 2024 in response to a Notice of Delinquent Mandatory Notices mailed on July 12, 2024 (Paper 4)). On October 31, 2024 Patent Owner filed a paper titled “Responding to *Inter Partes* Review of U.S. Patent No. 8.270,578 and Mandatory Notices.” Paper 11. We understand this paper to be the Patent Owner’s Response Brief.

C. The '578 Patent

The '578 patent relates to “an apparatus for engaging in wireless commercial transactions.” Ex. 1001, code [57].

Figure 4, reproduced below, illustrates the steps of using system 310 to make a wireless payment. *Id.* at 2:21.

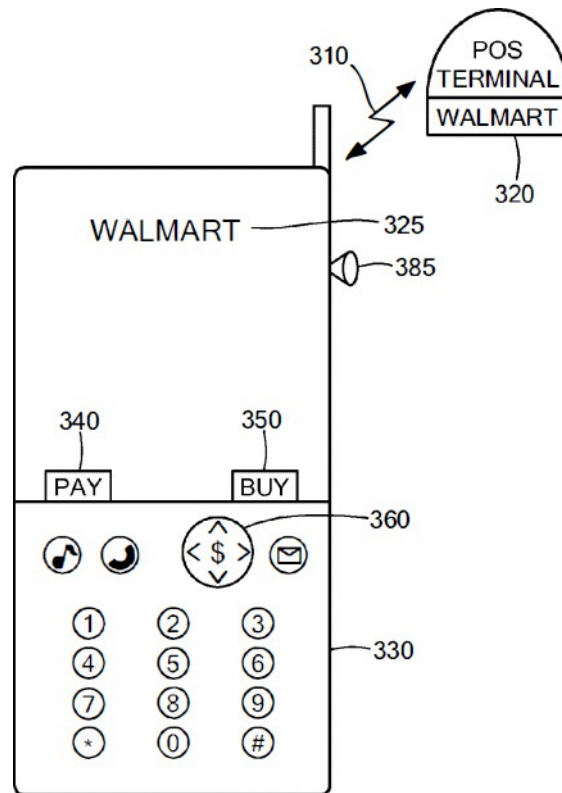


FIG. 4

Figure 4 of the '578 patent, reproduced above, “shows a system 310 for acquiring goods and services and dispensing payment in any establishment.” *Id.* at 6:49–50.

Figure 4 depicts system 310 including “portable telephone 330 equipped with an optical input 385, such as a photo camera or scanner” and “a dedicated main actuator 360,” labeled “\$.” Telephone 330 also displays

navigational icons including “PAY” icon 340 and “BUY” actuator 350. *Id.* at 6:56–59, 7:3–7. System 310 includes “a POS (point-of-sale) terminal 320 that transmits its ID signal within the perimeter of a commercial establishment” and causes the name of the establishment, 325, to be displayed on telephone 330. *Id.* at 6:51–53, 7:1–4. In addition, “[s]oftware integrated into the telephone 330 and POS terminal 320 allows for computing and data exchange between the telephone 330 and the POS terminal 320.” *Id.* at 6:65–67.

According to the ’578 patent, the “PAY” and “BUY” navigational icons are displayed when actuator 360 is activated. *Id.* at 7:3–7. Choosing “PAY” results in a list of payment options and a special code is given to the customer to enter next to the selected form of payment, after which processing and authorization of payment takes place. *Id.* at 7:8–35. Choosing “BUY” results in a mode shown in Figure 8, reproduced below.

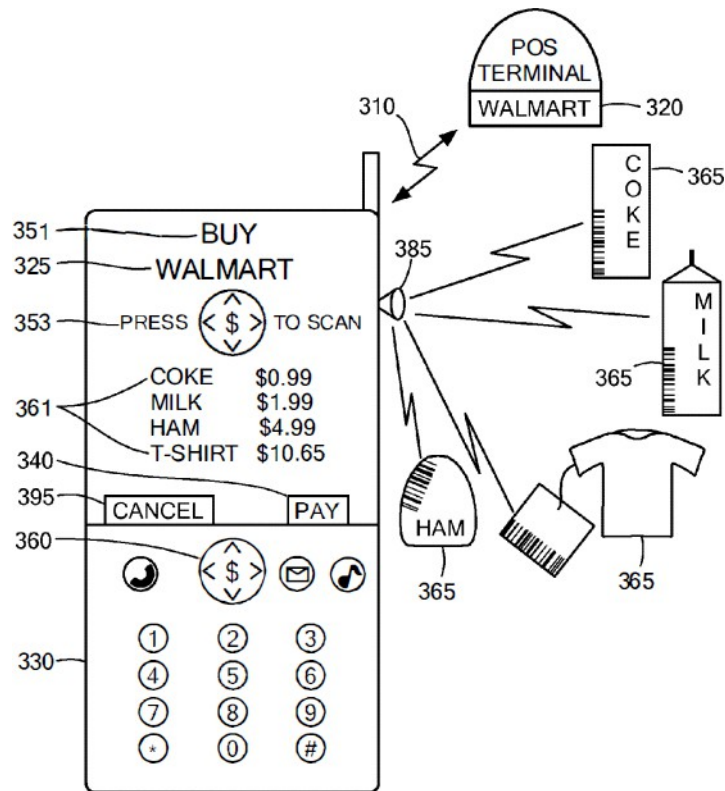


FIG. 8

Figure 8 of the '578 patent, reproduced above, includes “the screen of mobile phone 330 display BUY mode 351 status, along with the establishment name 325, and shopping instruction 353.” *Id.* at 7:42–44.

Figure 8 depicts BUY mode in which “the customer aims the optical input 385 towards the barcode or special code 365 of the product or merchandise” and then activates main actuator 360 to scan barcode 365. *Id.* at 7:44–48.

Scanning the barcode causes the price of the item to be added to retail bill 361. *Id.* at 7:48–49. Upon completion of shopping, the customer presses the “PAY” icon. *Id.* at 7:53–55.

According to the '578 patent, this system “provides numerous benefits to the public by eliminating or shortening queues at ATM[s] in rush hours”

and “eliminating the time-consuming wait at the cash register to make payment.” *Id.* at 8:61–65.

D. The Challenged Claims

We reproduce challenged claim 1 below.

1. An apparatus for engaging in wireless commercial transactions, said apparatus comprising:
 - a mobile phone equipped with a dedicated actuator for initiating a commercial transaction, and an optical input for receiving information concerning prices of goods;
 - a network hub for wireless exchange of information between a commercial establishment and said mobile phone within the boundaries of the establishment;
 - and a financial/authorization institution for associating a PIN number with said mobile phone and for authorizing transactions initiated by said mobile phone,wherein a terminal associated with a point of sale at the commercial establishment generates a code to be entered in the phone to further the transaction.

Ex. 1001, 9:24–36.

Challenged claims 2–6 and 8–13 depend directly or indirectly from claim 1. Challenged claim 15 is independent and recites the same language as claim 1 except for the last wherein clause, “wherein actuation of the dedicated actuator causes display of a button to consummate a commercial transaction.” Ex. 1001, 10:11–22. Challenged claims 16–20 and 22–27 depend either directly or indirectly from claim 15.

E. Asserted Challenge to Patentability

Petitioner asserts that claims 1–6, 8–13, 15–20, and 22–27 are unpatentable on the following ground.

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1	103	Wang, ² Duo, ³ Yong ⁴

In support of its patentability challenge, Petitioner relies on, *inter alia*, the Declaration of Benjamin B. Bederson, Ph.D, and a supplemental declaration of Dr. Bederson. Exs. 1003, 1023.

II. DISCUSSION

A. Level of Ordinary Skill

We review the grounds of unpatentability in view of the understanding of a person of ordinary skill in the art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). For purposes of this proceeding, Petitioner argues a person of ordinary skill in the art at the time of the invention would have had “a bachelor’s degree in computer science, computer engineering, or equivalent with one to two years of experience in the field of mobile transactions.” Pet. 8 (citing Ex. 1003 ¶¶ 35–37). Petitioner adds that “[a]dditional education or experience might substitute for the above requirements.” *Id.* Patent Owner does not address the level of ordinary skill in the art. *See* PO Resp.

² US Patent App. Pub. No. US 2002/0023215 A1 (Ex. 1004).

³ US Patent App. Pub. No. US 2006/0165060 A1 (Ex. 1005).

⁴ Korean Unexamined Patent App. Pub. No. 10-2007-0063899 (Ex. 1006). Petitioner submits Yong’s Korean-language patent application and a certified translation of the same. *See id.* We refer to the English-language translation of Yong.

To the extent necessary, and for purposes of this Decision, we accept the assessment offered by Petitioner, as it is supported by Dr. Bederson’s testimony and appears consistent with the ’578 patent and the asserted prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (explaining that specific findings regarding ordinary skill level are not required “where the prior art itself reflects an appropriate level and a need for testimony is not shown”) (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985)); Ex. 1003 ¶ 36.

B. Claim Construction

In an *inter partes* review proceeding, we construe a claim of a patent “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” *See* 37 C.F.R. § 42.100(b). That standard involves construing claims in accordance with the ordinary and customary meaning of such claims as would have been understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc). Claim terms need only be construed to the extent necessary to resolve the controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

Petitioner asserts that the terms used in the challenged claims “should be given their plain and ordinary meaning as understood by a POSITA in view of the patent and file history.” Pet. 10 (citing *Phillips*, 415 F.3d at 1312–13). Petitioner then proposes constructions for the claim terms “receiving information concerning the prices of goods” and “initiating a commercial transaction.” *Id.* at 10–14, 23–25.

1. “*receiving information concerning the prices of goods*”

Both challenged independent claims 1 and 15 recite “an optical input for receiving information concerning prices of goods” Ex. 1001, 9:27–28, 10:14–15.

Petitioner asserts that the Specification describes an optical input as “a scanner, reader, or camera” that is aimed at a barcode or special code of a product, the price of which is then added to the retail bill. Pet. 10–11 (quoting Ex. 1001, 7:45–49, 9:5–11). According to Petitioner, the Specification does not elaborate further on the meaning of the term “information concerning prices of goods.” *Id.* at 11. Petitioner, thus, interprets the term to encompass scenarios in which price information is received directly or indirectly. *Id.* Petitioner notes that during prosecution of the ’578 patent, the Examiner rejected this limitation over prior art, stating that prior art “sends the scanned bar code information to the server,” which “then preferably returns a description of the item and information,” and “[t]his item description and price information is displayed on the telephone’s display.” *Id.* at 12 (quoting Ex. 1002, 231). According to Petitioner, this is an example of indirectly receiving information concerning the prices of goods as it comes from a queried server, not from the item itself. *Id.* Petitioner notes that Patent Owner never disputed, and in fact, made statements supporting that these actions were encompassed by the claim limitation. *Id.* (citing Ex. 1002, 214).

We agree with Petitioner that nothing in the claim language or the Specification requires that the claimed optical input receive information concerning the prices of goods *directly* from the goods themselves. Patent Owner does not explicitly address the claim construction of this term. *See* PO Resp. Patent Owner, however, does assert that “it would be logical for

those skilled in [the] art to apply any available technology to further modify and improve the shopping experience by taking a scan/pic of the products bar codes, instead of entering them manually.” *Id.* at 2–3. This assertion is not inconsistent with a finding that the scanned bar code information may be received indirectly.

Accordingly, on this record, we construe the term “receiving information concerning the prices of goods” to encompass receiving pricing information from a server.

2. “*initiating a commercial transaction*”

Both challenged independent claims 1 and 15 recite “a dedicated actuator for initiating a commercial transaction.” Ex. 1001, 9:27–28, 10:14–15.

Petitioner asserts that the Specification “does not expressly define what types of events constitute ‘initiating’ a commercial transaction,” but that the record supports interpreting the term to include the process of establishing a connection between the mobile device and the checkout terminal. Pet. 23–25 (citing Ex. 1001, 6:56–59, 7:1–7, 8:3–8; Ex. 1003 ¶ 53). Specifically, Petitioner explains that the ’578 patent describes actuator 360 as the only “dedicated” actuator. *Id.* at 23 (citing Ex. 1001, 6:56–59). Petitioner adds that when actuator 360 is engaged it “establishes a connection between the telephone 330 and the POS terminal 320 of a particular establishment.” *Id.* (quoting Ex. 1001, 7:1–3). Accordingly, Petitioner concludes that initiating a commercial transaction by a dedicated actuator encompasses establishing a connection between the mobile device and checkout terminal. *Id.* at 24 (citing Ex. 1003 ¶ 53).

Patent Owner does not address the construction of this term. *See* PO Resp.

The '578 patent states that actuating main actuator 360 — in one embodiment a button labeled with “\$” — establishes a connection between telephone 330 and POS terminal 320 of a particular establishment and causes the name of the establishment to be displayed with additional navigational icons, such as “PAY” and “BUY.” Ex. 1001, 7:56–7:7; *see also* 8:3–8 (describing this process in an embodiment in which the particular establishment provides dining services). We agree that this process is within the plain and ordinary meaning of “initiating a commercial transaction.” Accordingly, we agree with Petitioner that a reasonable interpretation of the term “initiating a commercial transaction” encompasses the process of establishing a connection between the mobile device and the checkout terminal.

3. Conclusion

As noted above, “we need only construe terms . . . to the extent necessary to resolve the controversy.” *Nidec*, 868 F.3d at 1017. For purposes of this Decision, it is not necessary to construe expressly any terms except (1) “receiving information concerning the prices of goods,” and (2) “initiating a commercial transaction,” which we construe as set forth above.

C. Priority Date of the Challenged Claims

On its face, the '578 patent, which issued from U.S. application 12/596,531 (“the '531 application”), asserts it is a “[c]ontinuation-in-part of application No. 12/087,539, filed as application No. PCT/CA2004/000513 on Apr. 7, 2004” (“the PCT application”). Ex. 1001, code [63]. Applicant also states that it is a continuation-in-part of US application 10/407,222 (“the '222 application”), which was filed April 7, 2003. Ex. 1001, 1:9–11; Ex. 1002, 39; Ex. 1008, 2.

In an *inter partes* review, the burden is on the petitioner to show a reasonable likelihood that it would prevail on a ground of unpatentability. 35 U.S.C. § 314(a). With respect to entitlement to any earlier effective filing date, however, a patent owner is not presumed to be entitled to the earlier filing dates of ancestral applications that do not share the same disclosure, such as in a continuation-in-part situation. *See PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1305–06 (Fed. Cir. 2008) (stating that once a defendant establishes that a reference is § 102(b) prior art, burden is on patent owner to come forward with evidence proving priority to an earlier filing date).

Petitioner asserts that because neither the PCT application nor the '222 application (collectively, “the Priority Applications”) provide written description support for the challenged claims, the effective date for this Decision on institution should be October 19, 2009, the filing date of the '531 application. Pet. 3. Patent Owner, however, argues that the PCT application supports a filing date of April 7, 2004. PO Resp. 1 (citing Ex. 2001⁵).

Specifically, Petitioner argues that the Priority Applications do not provide written description support for several claim limitations. First, Petitioner points to “an optical input for receiving information concerning prices of goods” (“the optical input limitation”), which is recited by independent claims 1 and 15. Pet. 4. Petitioner asserts that the Priority Applications do not disclose an optical input, a photo camera, or a scanner, but instead describe users learning price information from seeing an

⁵ The entirety of the PCT application is included in Exhibit 1007 pages 124–141, Exhibit 1008 pages 554–568, and Exhibit 2001. For clarity, in this Decision when referring to the PCT application, we cite to Exhibit 2001.

advertisement on externally located TV screens. *Id.* at 5 (citing Ex. 2001, 6, 8–9; Ex. 1008⁶, 559, 562–563).

Petitioner also argues that the Priority Applications do not provide written description support for “a network hub for wireless exchange of information between a commercial establishment and said mobile phone within the boundaries of the establishment” (“the network hub limitation”), which is also recited by independent claims 1 and 15. Pet. 5. Petitioner asserts that, “while the Priority Applications disclose a ‘network hub 20,’ that network hub is solely responsible for distributing audio/video feeds and is not tied in any way to a commercial transaction.” *Id.* (citing Ex. 2001, 4–5; Ex. 1008, at 557–58).⁷

⁶ Many of the page numbers of Exhibit 1008 appear to be redacted. *See, e.g.*, 552. For purposes of this Decision, we refer to the page numbers as best we understand them.

⁷ Petitioner also relies on the fact that, during prosecution of a continuation of the ’578 application, U.S. Application No. 13/559,194 (“the ’194 application”), claims very similar in language to that of claims 1 and 15 were rejected as obvious based in part on references published after the dates of the Priority Applications — April 30, 2009 (US Patent No. 8,219,490) and January 28, 2010 (US 2010/0023449). Ex. 1009, 397 (U.S. Application No. 13/559,194 Non-Final Act. (mailed May 21, 2014)). Pet. 6. The Examiner, in that case, explicitly found that the PCT application “does not teach” all the limitation of the claims. Ex. 1009, 168 (Examiner’s interview summary dated June 25, 2013). Patent Owner appeared to understand the Examiner considered “the optical input and the hub as not being disclosed” by the PCT application (the parent of the ’578 patent). *Id.* at 178 (Patent Owner’s interview summary dated July 26, 2012). Patent Owner appealed the obviousness rejection to both the PTAB and Federal Circuit, but apparently did not argue that the rejected claims were entitled to the dates of the Priority Applications. *See In re Poniatowski*, 688 Fed. App’x. 912 (Fed. Cir. 2017) (affirming the PTAB decision and noting, but not further discussing, the claim to a priority date of April 7, 2003) (Ex. 1009, 731); *Ex*

In regard to the optical input limitation, Patent Owner responds that the PCT application discloses that:

[E]nd users may then do their shopping over the telephone based on what is being advertised on the display screens. End user choices, such as the colour, size, or type of merchandise, could be entered by the end user via the telephone keypad.

PO Resp. 2 (citing Ex. 2001, 10:6–9). According to Patent Owner, at the time of the PCT application’s filing, “smart phones were in [their] infancy” and “megapixel cameras were introduced” in the “late 2000’s.” *Id.* at 2. Patent Owner adds that because “the human eye is a primary optical input it would be logical for those skilled in [the] art to apply any available technology to further modify and improve the shopping experience by taking a scan/pic of the products bar codes, instead [of] entering them manually,” which “automated method [has been] used in retail stores for decades.” *Id.* at 2–3.

In regard to the network hub limitation, Patent Owner points to the PCT application’s disclosure of the use of PIN numbers to validate transactions prior to charging a user’s credit card and shipping any purchased product. *Id.* at 3–4 (citing Ex. 2001 10:10–20). According to Patent Owner, at the time of the PCT application’s filing, it was a “well known fact that for decades . . . debit or credit card transactions in commercial establishments are executed at financial hubs” and “[i]t would be obvious to the skilled art[isan] to accept such architecture as a basic standard set up within all retailers.” *Id.* at 4.

Parte Paul Poniatowski, 2016 WL 3442692 (PTAB 2016) (affirming the Examiner’s rejection) (Ex. 1009, 497); *Ex Parte Paul Poniatowski*, 2016 WL 6524749 (PTAB 2016) (denying rehearing request) (Ex. 1009, 515).

We understand Patent Owner to argue that although the PCT application only discloses receiving optical input using the human eye, and the use of PIN numbers, it would have been obvious use megapixel cameras integrated into a mobile phone based on the subsequent developments of technology and the PCT application's disclosure that a user could enter optical values manually, and to use financial hubs in transactions.

We agree with Petitioner that the Priority Applications do not disclose the optical input and network hub limitations or their equivalent. As Petitioner argues, “disclosure in a parent application that merely renders the later-claimed invention obvious is not sufficient to meet the written description requirement; the disclosure must describe the claimed invention with all its limitations.” *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1158 (Fed. Cir. 1998) (citing *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997)) (“It is not sufficient...that the disclosure, when combined with the knowledge in the art, would lead one to speculate as to modifications that the inventor might have envisioned, but failed to disclose”). Reply 4.

Accordingly, for the purposes of determining eligible prior art for this Decision, we rely on the '578 patent's application filing date of October 19, 2009.

D. Alleged Obviousness over Wang, Dua, and Yong

Petitioner asserts that claims 1–6, 8–13, 15–20, and 22–27 would have been obvious over a combination of Wang, Dua, and Yong. Pet. 20–63. For the reasons explained below, we determine that Petitioner has proved by a preponderance of the evidence that the challenged claims are unpatentable.

1. Wang

Wang is a US Patent Application Publication published on Feb. 21, 2002. Ex. 1004. It describes “approving a transaction request between an

electronic transaction system and a portable electronic authorization device (PEAD) carried by a user using an electronic service authentication token.” *Id.*, code [57]. Figure 6A of Wang is reproduced below.

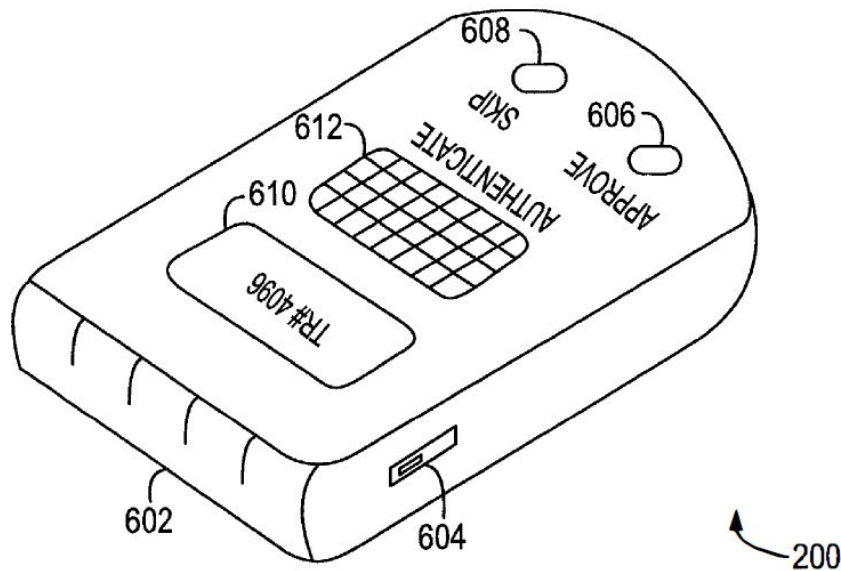


FIG. 6A

Figure 6A of Wang, reproduced above, shows “portable electronic authorization device (PEAD), representing the apparatus for securely approving transactions conducted vis-a-vis an electronic transaction system.” *Id.* ¶¶ 19, 26.

Figure 6A shows PEAD 200, which is “preferably implemented as a small, self-containing package that is sufficiently ruggedized for daily use in the field” and can “be built-in a portable phone.” *Id.* ¶¶ 70, 72. PEAD 200 includes (1) infrared communication port 602 for receiving and transmitting data with the electronic transaction system, (2) approve button 606, which “permits the user to signify approval of a proposed transaction,” (3) “[o]ptional display 610,” which “displays, among others, the transaction

being proposed for approval,” and (4) “an alternative input device built into the PEAD such as a barcode scanner or OCR reader to scan in the unique ID of the Point-of-Sale terminal” or “merchandise bar code number.” *Id.* ¶¶ 71–72, 113.

Wang describes using the PEAD for a “Point-of-Sale Transaction” through a wireless network and Internet. *Id.* ¶ 113. The PEAD can use a unique transaction number generated by the Point-of-Sale Terminal or a unique PEAD ID to establish a communication link with the terminal and conduct the transaction. *Id.* “Once the link between the PEAD and Point-of-Sale terminal is established, the PEAD can display the transaction information including the price, items, etc., and if the user agrees to pay, he will press the approve button to authorize the transaction.” *Id.* Wang also describes using encryption for a further level of security, which requires the user to enter a password or pass phrase to engage in a transaction. *Id.* ¶¶ 16, 45, 72, 87

2. *Dua*

Dua is a US Patent Application Publication published on July 27, 2006. Ex. 1005. It describes “conducting financial and other transactions using a wireless device.” *Id.*, code [57].

Figure 6a of *Dua* is reproduced below.

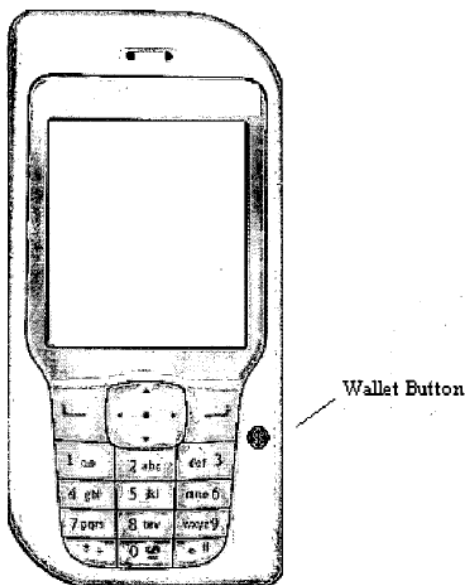


FIG. 6(a)

Figure 6a of Dua, reproduced above, shows “where a ‘wallet button’ might be situated on a wireless device.” *Id.* ¶ 33.

Figure 6A shows a “wallet button” on the front of a wireless device. *Id.* at ¶ 387. This button “can be used to . . . control the transmission of information to an external device via RFID (or some other short-range communication mechanism).” *Id.* ¶ 383.

3. *Yong*

Yong is a Korean publication of an unexamined patent application published on June 20, 2007. Ex. 1006. It describes “providing disbursed commodity code inputting services. *Id.*, code [57]. Figure 1 of *Yong* is reproduced below.

FIG. 1

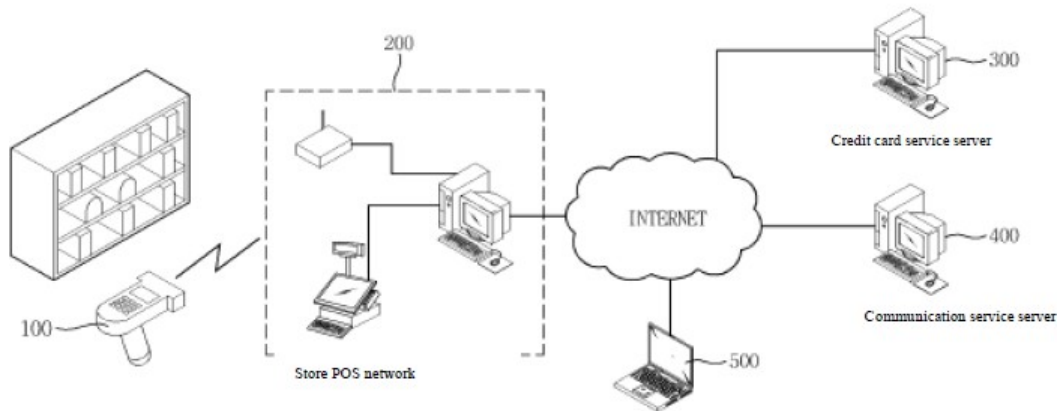


Figure 1 of Yong, reproduced above, shows “a configuration diagram of a disbursed commodity code input system.” *Id.* at 18.

Figure 1 shows commodity code input terminal 100, which “is issued to the customer entering the store and allows the customer to directly enter the commodity code by carrying it while shopping, such as by scanning a bar code.” *Id.* at 13. Store POS network 200 provides a network for payment and inventory management. Communication Unit 160 of the commodity code input terminal 100 “communicates with the communication unit 230 of the store POS network 200 using wireless communication such as Bluetooth, Wi-Fi, ZigBee, IrDA, and wireless LAN.” *Id.*

4. *Whether The Prior Art Is Analogous To The '578 Patent*

Patent Owner argues that neither Wang, Dua, nor Yong are in the same field of endeavor of, or are otherwise analogous to, the '578 patent. PO Resp. 4–5; PO Sur-Reply 2. In particular, Patent Owner argues that Wang is an authorization device for approving transaction requests, followed by user approval to authorize the transaction, which “is vastly different than act of

initiation [of a transaction].” PO Resp. 4–5. Patent Owner argues that therefore Wang “is not in the same field of endeavor nor its art is analogous to ’578 Patent [directed to] ‘a mobile phone equipped with a dedicated actuator for initiating a commercial transaction.’” *Id.* Patent Owner applies the same rationale for Dua, arguing that it “simply represents [a] payment function” rather than “initiat[ing] [a] commercial transaction.” *Id.* at 5. And Patent Owner argues that Yong is “a simple scanner . . . that can not perform as mobile phone,” and “collects products data for further task but does not initiate transaction.” *Id.* Patent Owner also argues that Yong is merely a price checking device. PO Sur-Reply 2.

Petitioner argues that that Patent Owner offers no alternative to the definition in the Petition of the field of endeavor of the ’578 patent as “using a mobile device to conduct a commercial transaction.” Reply 6 (citing Pet. 16, 18, 19). Petitioner argues that Patent Owner focuses on minor differences with the claimed invention that are irrelevant to the field of endeavor inquiry. *Id.* Petitioner cites the ’578 patent as support for its definition: “[t]his disclosure pertains to . . . applications of wireless networks of a retail establishment.” *Id.* at 7 (citing Ex. 1001, 1:16–18). Petitioner also relies on the claim language: “apparatus for engaging in wireless **commercial** transactions.” *Id.* (citing claims 1, 15). Petitioner further argues that the described embodiments in the ’578 patent supports its definition. *Id.* at 7–8 (citing Ex. 1001, Figs. 4–5, 12–13, 6:49–7:67, 8:1–60). Petitioner submits that the Petitioner demonstrates that each of Wang, Dua, and Yong fall squarely with this field, and that Patent Owner provides no reason to dispute Petitioner’s characterizations. *Id.* at 8 (citing Pet. 14–19).

In regard to Patent Owner’s argument that the references do not imitate transactions, Petitioner points out that this is only one of a number of

claim requirements of the '578 patent, and that the prior art “need not disclose every limitation of the claimed invention to fall within the same field of endeavor as the claimed invention.” Reply 9 (citing *In re Chaganti*, 554 F. App'x 917, 921 (Fed. Cir. 2014); *Axonics, Inc. v. Medtronic, Inc.*, 73 F.4th 950, 958–59 (Fed. Cir. 2023)).

Petitioner further argues that, aside from the field of endeavor issue, the references qualify as analogous art because each is reasonably pertinent to problems faced by the inventor of the '578 patent. Reply 10–14. Petitioner argues that both the '578 patent and the relied-on references address problems arising from advancements in shopping technology, including how a user interacts with a mobile device and how that mobile device facilitates making a purchase in a commercial establishment. *Id.* at 11–12 (citing Ex. 1023 ¶¶ 7–14). For example, Petitioner cites the security concerns of Wang and Dua arising from the increasing reliance on mobile devices to facilitate commercial transactions, the use of an optical scanner in Wang to streamline the shopping experience, and Yong addressing costs by compiling product information in a database at the commercial establishment and enabling mobile devices to connect to and retrieve information while shopping. *Id.* at 12–13 (citing Ex. 1023 ¶¶ 11–14; Ex. 1004 ¶ 2; Ex. 1005 ¶ 14; Ex. 1006 ¶ 1).

We determine that the preponderance of the evidence supports Petitioner arguments that the cited references are analogous art. Our reviewing court has stated that “[t]wo separate tests define the scope of analogous prior art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed and, (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.” *In*

re Bigio, 381 F.3d 1320, 1325 (Fed. Cir. 2004) (citations and internal quotes omitted). While these two criteria are helpful in many instances, we must not lose sight of the key question at hand: what is “prior art” as that term is used in 35 U.S.C. § 103(a)? References that are “too remote to be treated as ‘prior art’” are excluded from the obviousness analysis. *In re Sovish*, 769 F.2d 738, 741, 226 (Fed. Cir. 1985). The non-analogous art test provides helpful insight on the underlying question of what is “prior art” within the meaning of the statute; we should not, however, be blind to the reality of the circumstances of the case before us. *In re Wood*, 599 F.2d 1032, 1036 (CCPA (1979)). Nor should we adhere to rigid and mandatory formulas that overly limit the inquiry. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007).

Focusing on the first of the two tests above, the test for analogous art “requires the PTO to determine the appropriate field of endeavor by reference to explanations of the invention’s subject matter in the patent application, including the embodiments, function, and structure of the claimed invention.” *In re Bigio*, 381 F.3d at 1325. We thus consider all explanations of the inventors’ subject matter while keeping in mind that prior art is analogous when it “is from the same field of endeavor, *regardless of the problem addressed*. . . .” *In re Bigio*, 381 F.3d at 1320 (emphasis added). Thus, “field of endeavor” should not be defined narrowly based only upon the specific problem addressed.

Moreover, when considering field of endeavor, we also remain cognizant of the adage that “the name of the game is the claim.” *In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998) (quoting Giles Sutherland Rich, *Extent of Protection and Interpretation of Claims—American Perspectives*, 21 Int’l Rev. Indus. Prop. & Copyright L. 497, 499 (1990)).

The Supreme Court articulated this same sentiment when emphasizing that the patentee's motivation and purpose do not control an obviousness determination:

In determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls. What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under § 103.

KSR Intern. Co., 550 U.S. at 419 (emphasis added).

Here, Petitioner sufficiently demonstrates by the preponderance of the evidence that the relied-on references are in the same field of endeavor as the '578 patent. As summarized above both the '578 patent and the relied-on art are squarely in the field of "using a mobile device to conduct a commercial transaction." Also as summarized above, a preponderance of evidence also supports that Wang, Dua, and Yong are analogous art because they are reasonably pertinent to the particular problem with which the '578 inventor is involved.

5. *Independent Claim 1*

a. *Preamble: "an apparatus for engaging in wireless commercial transactions, said apparatus comprising"*

Claim 1 recites an "an apparatus for engaging in wireless commercial transactions."⁸ Petitioner asserts that Wang teaches such an apparatus, PEAD ("portable electronic authorization device") 200, as shown in

⁸ Based on the record, we make no determination that the preamble of claim 1 is limiting.

Figure 2. Pet. 20–21. According to Petitioner, Wang expressly discloses commercial transactions. *Id.* at 21 (quoting Ex. 1004 ¶¶ 37, 113–115).

We have reviewed the evidence cited by Petitioner, and find Wang teaches the subject matter of the preamble sufficiently to meet Petitioner’s burden.

b. “a mobile phone equipped with a dedicated actuator for initiating a commercial transaction”

Claim 1 recites “a mobile phone equipped with a dedicated actuator for initiating a commercial transaction.” Ex. 1001, 9:25–27. To teach this limitation, Petitioner asserts that Wang teaches that PEAD 200 can be built into a portable phone. Pet. 22 (quoting Ex. 10041005 ¶¶ 67, 72, 108, 113). Petitioner also points out that Wang’s PEAD has physical buttons dedicated to specific functions, including approve button 606, which “permits the user to signify approval of a proposed transaction” and skip button 608, which “permits the user to indicate rejection of a particular transaction.” *Id.* at 25 (citing Ex. 1004, Figs. 6A, 12A, ¶¶ 71–72). According to Petitioner, Wang teaches that its POS transactions require the PEAD to “establish [a] communication link with the [POS] system through the wireless network and Internet.” *Id.* at 26 (quoting Ex. 1005 ¶ 113).

Petitioner concedes that “Wang does not expressly teach a dedicated actuator for initiating a commercial transaction (e.g., for establishing the wireless communication link with the POS terminal). *Id.* Instead, Petitioner relies on Dua’s wallet button as teaching “a dedicated actuator that enables communication with a POS terminal.” *Id.* 26–27 (citing Ex. 1005, Figs. 6a, 6b, ¶ 383; Ex. 1003 ¶¶ 54–55). We agree that Dua’s wallet button is a dedicated button that when pressed and released “enables communication [to an external device] via the RFID interface in the device.” Ex. 1005 ¶ 383.

Petitioner adds that a person of ordinary skill would have found it obvious to modify Wang’s device to add one more dedicated button — Dua’s dedicated wallet button — because Wang does not expressly teach how the process of connecting to a POS terminal is initiated and a dedicated button for such activity would provide efficient power consumption, allow for user control of the process, and improve security. *Id.* at 28–30 (citing Ex. 1003 ¶¶ 56–57). Petitioner also explains that a person of ordinary skill would have had a reasonable expectation that such modification would be successful. *Id.* at 29 (citing Ex. 1003 ¶ 56).

We have reviewed the evidence cited by Petitioner, and find the combined teachings of Wang and Dua teach the subject matter of “a mobile phone equipped with a dedicated actuator for initiating a commercial transaction” sufficiently to meet Petitioner’s burden.

c. “an optical input for receiving information concerning prices of goods”

Claim 1 recites “a mobile phone equipped with . . . an optical input for receiving information concerning prices of goods.” Ex. 1001, 9:25–28. Petitioner points to Wang’s “mobile-integrated PEAD embodiment with an optical barcode scanner” as teaching this limitation. Pet. 31–32 (citing Ex. 1004, Fig. 12A, ¶ 113). According to Petitioner, Wang “expressly teaches that its optical scanner is for, among other things, scanning an item’s barcode to obtain the information necessary so the PEAD can generate the transaction information, including the item’s price.” *Id.* at 32–33 (citing Wang ¶¶ 113, 115).

We have reviewed the evidence cited by Petitioner, and find Wang teaches the subject matter of “an optical input for receiving information concerning prices of goods” sufficiently to meet Petitioner’s burden.

- d. “a network hub for wireless exchange of information between a commercial establishment and said mobile phone within the boundaries of the establishment”*

Claim 1 recites “a network hub for wireless exchange of information between a commercial establishment and said mobile phone within the boundaries of the establishment.” Ex. 1001, 9:28–30. Petitioner asserts that a person of ordinary skill would have understood that Wang’s “PEAD wirelessly exchanges information (e.g., barcodes and prices) with the commercial establishment (e.g., the price lookup table stored in a server system) while the PEAD is within the boundaries of the establishment (e.g., scanning items while shopping).” Pet. 35 (citing Ex. 1003 ¶ 62). Petitioner concedes that “Wang does not expressly teach that this wireless exchange of information occurs through the use of a network hub.” *Id.* Instead, Petitioner asserts that it was “well known to conduct such wireless transactions through a network hub” and Yong expressly teaches “wirelessly communicating product and pricing information between a mobile device and commercial establishment via network hubs.” *Id.* at 35–36 (citing Ex. 1006, 13, 17, Fig. 1; Ex. 1003 ¶ 62).

We agree that Yong teaches that POS network 200 “is installed with . . . a plurality of APs (Access Points) . . . to cover the entire store” and communications over POS network 200 us “wireless communication such as Bluetooth, Wi-Fi, ZigBee, IrDA, and wireless LAN.” Ex. 1006, 13. On this record, we find sufficient Petitioner’s assertion, confirmed by Dr. Bederson, that a person of ordinary skill would have understood Yong’s Access Points to teach a network hub within the boundaries of a commercial establishment for purposes of the wireless exchange of information. Pet. 37 (citing Ex. 1003 ¶ 62).

According to Petitioner, a person of ordinary skill would have been motivated to “employ Yong’s network hub arrangement in Wang’s system to facilitate Wang’s PEAD’s retrieval of an item’s price information from the price lookup table stored on the server system” because it would “improve[] Wang’s system in the same ways as expressly taught by Yong” and would “alleviate[] network congestion and reduc[e] delays in response time.” Pet. 38 (citing Ex. 1003 ¶ 63). Petitioner adds that although Wang describes cellular communications, “as of the 2009 priority date, WLANs such as Wi-Fi were widely available and commonplace in commercial establishments” and a person of ordinary skill would have understood that “WLANs imposed reduced costs relative to cellular data communications.” *Id.* at 38–39 (citing Ex. 1003 ¶ 63).

We have reviewed the evidence cited by Petitioner, and find the combined teachings of Wang and Yong teaches the subject matter of “a network hub for wireless exchange of information between a commercial establishment and said mobile phone within the boundaries of the establishment” sufficiently to meet Petitioner’s burden.

e. “a financial/authorization institution for associating a PIN number with said mobile phone and for authorizing transactions initiated by said mobile phone”

Claim 1 recites “a financial/authorization institution for associating a PIN number with said mobile phone and for authorizing transactions initiated by said mobile phone.” Ex. 1001, 9:31–33. Petitioner relies on Wang’s third party server 1302 as teaching this limitation. Pet. 39–44. Petitioner points to Wang’s transaction authorization process that stores a decryption key in a third-party server. *Id.* at 40–42 (citing Wang Figs. 2, 13A, ¶¶ 39, 52, 59–60, 113, 121, 123). According to Petitioner, a person of

ordinary skill would have understood that Wang’s password or pass phrase satisfies the claimed “PIN number,” or it would have been obvious to modify Wang’s system to use a PIN number. *Id.* at 39, 43 (citing Ex. 1003 ¶ 67).

Although Petitioner concedes that Wang does not provide any specific examples of passwords or pass phrases, Petitioner asserts that a person of ordinary skill “would have understood that passwords, like PINs could be any combination of letter, numbers, or characters.” *Id.* at 43. Petitioner adds that Wang describes authenticating users via pin numbers as a means of authenticating an ATM user using a less secure process of authentication. *Id.* at 43 n.7 (citing Ex. 1004 ¶¶ 5–12). In addition, Petitioner points to Dua as expressly teaching that “users [may] validate their identity during a transaction by providing a PIN” and that “PINs can be any length, and comprised of any combination of upper or lower case letters, numbers, and special characters.” *Id.* at 43–44 (quoting Ex. 1005 ¶¶ 366, 397) (emphasis omitted).

We have reviewed the evidence cited by Petitioner, and find the combination of Wang and Dua or the knowledge of a person of ordinary skill in the art teaches the subject matter of “a financial/authorization institution for associating a PIN number with said mobile phone and for authorizing transactions initiated by said mobile phone” sufficiently to meet Petitioner’s burden.

f. “wherein a terminal associated with a point of sale at the commercial establishment generates a code to be entered in the phone to further the transaction”

Claim 1 recites “wherein a terminal associated with a point of sale at the commercial establishment generates a code to be entered in the phone to further the transaction.” Ex. 1001, 9:33–36. Petitioner relies on Wang as teaching this limitation. Pet. 45–46. Specifically, Petitioner points to Wang’s example in which “the communication link between the PEAD and the POS terminal is established by a POS terminal generating a unique ID that the user then enters into the PEAD.” Pet. 45 (quoting Ex. 1004 ¶ 113).

We have reviewed the evidence cited by Petitioner, and find Wang teaches the subject matter of “wherein a terminal associated with a point of sale at the commercial establishment generates a code to be entered in the phone to further the transaction” sufficiently to meet Petitioner’s burden.

g. Conclusion for Claim 1

Other than arguing that the relied-on references are not analogous art, Patent Owner does not further address Petitioner’s challenge to claim 1. *See* PO Resp. Accordingly, based on our analysis set forth above, we determine, having considered and weighed the entirety of the evidence, that Petitioner has proved by a preponderance of the evidence that claim 1 is unpatentable under 35 U.S.C. § 103(a) over the combination of Wang, Dua, and Yong.

6. Independent claim 15

Independent claim 15 includes much of the same language as claim 1. The only difference is the last limitation, “wherein actuation of the dedicated actuator causes display of a button to consummate a commercial transaction.” Ex. 1001, 10:11–22. As discussed above with respect to

claim 11, Petitioner relies on a combination of Wang and Dua as teaching this limitation. *Id.*

Other than arguing that the relied-on references are not analogous art, Patent Owner does not further address Petitioner’s challenge to claim 15. *See* PO Resp. Accordingly, having considered and weighed the entirety of the evidence, we determine that Petitioner has proved by a preponderance of the evidence that claim 15 is unpatentable under 35 U.S.C. § 103(a) over the combination of Wang, Dua, and Yong.

7. *Dependent Claims 2–6, 8–13, 16–20 and 22–27*

Claim 2 depends from claim 1 and additionally recites “wherein the mobile phone is configured to display information about goods scanned by said optical input on a display.” Ex. 1001, 9:37–39. Petitioner asserts that Wang’s PEAD “can display the transaction information including the price, items, etc.” Pet. 46 (quoting Ex. 1004 ¶ 113) (emphasis omitted).

Claim 3 depends from claim 1 and additionally recites “wherein the mobile phone is configured to provide a sequence of displays to guide a user of said mobile phone through a commercial transaction that includes identification of goods to be purchased and payment associated with said purchase.” Ex. 1001, 9:40–44. Petitioner relies on a combination of Wang and Dua as teaching this limitation. Pet. 46–49.

Petitioner asserts that “during the checkout process,” which is a commercial transaction, Wang’s PEAD “will display the transaction information including the price, items, etc.” Pet. 46–47 (quoting Ex. 1004 ¶ 113) (emphasis omitted). In addition, Petitioner asserts that Dua teaches displaying a PIN Approval Request Message screen that can be displayed to the user during the transaction, which display includes the payment total

associated with the pending purchase. *Id.* at 48–49 (citing Ex. 1005, Fig. 9, ¶ 410; Ex. 1003 ¶¶ 70–71). Figure 9 of Dua is reproduced below.

PIN Approval Request

Merchant:	Giant Grocery - Fairfax, VA		
Date/Time:	Nov 12, 2004 01:30 PM		
Total:	\$99.20		
Payment Method:	Sample Bank		XXXX 1005
Authorization Code:	328123445		

Enter PIN to approve transaction:

FIG. 9

Figure 9 of Dua, reproduced above, shows an “example screen shot of a PIN Approval Request displayed by the wallet application according to a preferred embodiment of the present invention.” Ex. 1005 ¶ 36.

According to Petitioner, a person of ordinary skill in the art would have found it obvious to create a display such as the PIN Approval Message taught by Dua on Wang’s PEAD upon activation of the approval button in order to provide security to the payment process. Pet. 48. Moreover, Petitioner asserts that such modification would have “only required simple programming techniques well with a POSITA’s expertise” and “only amounted to the combination of known elements according to known

methods to yield a predictable result.” *Id.* at 48–49 (citing Ex. 1003 ¶¶ 70–72).

Claim 4 depends from claim 1 and additionally recites “wherein the mobile phone is configured to generate a listing of items available for purchase.” Ex. 1001, 9:45–47. Petitioner relies on Wang as teaching this limitation. Pet. 50–51. According to Petitioner, Wang “expressly teaches the transaction information is displayed by the PEAD and at least includes the price and items being purchased.” *Id.* at 50 (citing Ex. 1004 ¶ 113).

Claim 5 depends from claim 4 and additionally recites “wherein the mobile phone is further configured to solicit a selection of a subset of items from said listing.” Ex. 1001, 9:48–50. Petitioner relies on Wang and the knowledge of a person of skill in the art as teaching this limitation. Pet. 51–52.

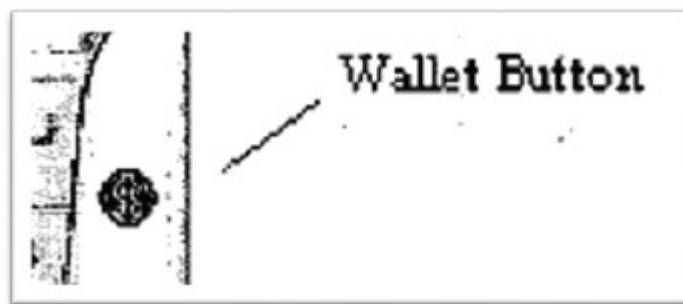
Petitioner asserts that a person of ordinary skill in the art would have found it obvious to modify Wang’s PEAD to allow a user to remove merchandise items from the displayed list of transaction information. *Id.* at 51. Petitioner explains that Wang teaches that upon display of the user’s transaction information, the user can press the approve button to authorize the transaction *if* the user agrees to pay, but does not expressly teach what happens if the user does *not* agree to pay. *Id.* at 51–52 (citing Ex. 1004 ¶ 113). According to Petitioner, a person of ordinary skill would have found it obvious to allow the user to remove those items they do not want to purchase from the list of transaction information so that the user does not have to abandon the entire transaction and begin again — which would require rescanning all the items they wish to purchase. *Id.* at 52 (citing Ex. 1003 ¶ 73). Dr. Bederson adds that a person of ordinary skill “would

have had the skill and found it obvious to make [such] minor adjustments to the software.” Ex. 1003 ¶ 73.

Claim 6 depends from claim 1 and additionally recites “wherein the mobile phone is configured to display information concerning an incomplete commercial transaction.” Ex. 1001, 9:51–53. Petitioner relies on Wang as teaching this limitation. Pet. 52–53. Specifically, Petitioner points to Wang’s disclosure that in the event of an incorrect password or pass phrase, “the event is recorded and the portable device is informed” (quoting Ex. 1004 ¶ 122) and “advises user to re-enter password.” *Id.* (citing Ex. 1004 Fig. 13B, ¶ 122).

Claim 8 depends from claim 1 and additionally recites “wherein the dedicated actuator comprises a button labeled with a symbolic indication of a function thereof.” Ex. 1001, 9:57–59. Petitioner relies on the combination of Wang and Dua for teaching this limitation. Pet. 53–54.

Specifically, Petitioner asserts that a close-up view of Dua’s Wallet button shows it is labeled “\$,” a symbol, indicating its function. We reproduce Petitioner’s close-up of Dua’s Figure 6(a) below.



Petitioner’s close-up view of Wang’s Figure 6(a) produced above, shows Dua’s wallet button with a label “\$.” Pet. 54.

Although Dua's Figure 6(a) and the close-up created by Petitioner are a bit blurry, we agree with Petitioner that it appears that Dua's wallet button has a label of "\$."

Claim 9 depends from claim 8 and additionally recites "wherein the button comprises a touch-sensitive region on a display of the mobile phone." Ex. 1001, 9:60–61. Petitioner relies on the combination of Wang, Dua, and the knowledge of a person of ordinary skill in the art for teaching this limitation. Pet. 54–56.

Petitioner explains that although Dua discloses a physical button, "as of the 2009 priority date of the '578 patent, a POSITA would have been motivated and found it obvious to implement Dua's wallet button as a touch-sensitive region of Wang's PEAD implemented in a mobile phone." *Id.* at 54. According to Petitioner, at that time, "smartphone with touchscreen displays for inputting commands were well-known and commonplace." *Id.* at 55 (citing Ex. 1003 ¶ 74). As evidence of this knowledge, Petitioner points to Dr. Bederson and also to US Patent Application Publication US2010/0023449 filed July 25, 2008, and published January 28, 2010 ("Skowronek"). *Id.* (citing Ex. 1010). Petitioner asserts that Skowronek shows that as of the 2009 priority date, it was known to incorporate "buttons comprising a touch-region on a display of a smartphone for the express purpose of starting up a wallet application and activating near-field communication to perform a transaction." *Id.* Dr. Bederson additionally points to US Patent No. 8,908,973, published September 10, 2009 ("Goldsmith") and US Patent No. 7,903,093 published July 24, 2008 ("Kim") as evidence that touch-screen buttons on smartphones were well-known. Ex. 1003 ¶ 74 (citing Ex. 1019, Ex. 1020). Petitioner adds that modifying the Dua wallet button to be implemented on a touchscreen would

have been a simple substitution of known elements to obtain predictable results and would “reduce the costs associated with manufacturing the Wang/Dua PEAD” and “increase the PEAD’s functionality.” *Id.* (citing Ex. 1003 ¶ 74).

Claim 10 depends from claim 1 and additionally recites “wherein actuation of the dedicated actuator causes information identifying the commercial establishment to be displayed on the mobile phone.” Ex. 1001, 9:62–64. Petitioner relies on Wang and the knowledge of a person of ordinary skill in the art for teaching this limitation. Pet. 56–58.

Petitioner asserts that in order to gain access to the server, “Wang teaches that the user must use the StoreID.” *Id.* at 57 (citing Ex. 1004 ¶ 115). One method Wang describes for communicating the StoreID is for it to be broadcast in store premises via short-range communication. Ex. 1004 ¶ 115 (stating that the user can connect to the store price table database, “through the Bluetooth short range radio to broadcast the StoreID in the store premises”). According to Petitioner, in such a case, the PEAD would also receive the StoreID and “[t]hen, in the same way the PEAD user would enter the POS terminal’s unique ID to establish the connection with the POS terminal, the user would enter the StoreID broadcast to the PEAD in order to connect to the store’s server” and thus, when received by the PEAD, the StoreID “would have been displayed by the PEAD in order to allow the user to see the StoreID so that he could input it into the device to establish the connection with the store’s server.” Pet. 57–58 (citing Ex. 1003 ¶ 75 (stating that “a POSITA would have understood that when the Store ID being broadcast is received by the PEAD, it would have been displayed by the PEAD in order to allow the user to see the StoreID so that he could input it into the device to establish the connection with the store’s server”)).

Claim 11 depends from claim 1 and additionally recites “wherein actuation of the dedicated actuator causes display of a button to consummate a commercial transaction.” Ex. 1001, 9:64–67. As discussed above with respect to claim 3, Petitioner relies on Dua’s PIN Approval Message screen combined with Wang’s authorization process using the PEAD to teach displaying information about the transaction during approval. Pet. 58. In addition, as discussed above with respect to claim 9, to teach using a touchscreen version of Dua’s wallet button, a POSITA would have found it obvious to implement Dua’s dedicated wallet button as a touch-sensitive region of Wang’s mobile display. *Id.* Petitioner asserts that based on these teachings, a person of ordinary skill in the art would have understood that actuation of the touch-sensitive dedicated actuator would have caused the display of Dua’s PIN Approval Message screen in Wang’s authorization process prompting the user to enter their PIN to authorize the transaction” and “[b]ecause that PIN Approval Message screen is being implemented on the touch screen phone, a POSITA would have understood that implementation of the PIN Approval Message screen would have resulted in the display of buttons for the user to use to enter their PIN and a button to submit their PIN was entered.” *Id.* at 58–59 (citing Ex. 1003 ¶ 76).

Claim 12 depends from claim 1 and additionally recites “wherein the mobile phone is configured to, on the basis of data provided by the optical input, display a price of an item.” Ex. 1001, 10:1–3. Petitioner relies on Wang as teaching this limitation for the same reasons discussed above in relation to claims 1 and 4. Pet. 59.

Claim 13 depends from claim 1 and additionally recites “wherein the mobile phone is configured to receive a coupon applicable to a future

transaction with the commercial establishment.” Ex. 1001, 10:4–6. Petitioner relies on Wang as teaching this limitation. Pet. 59–61.

Specifically, Petitioner points to Wang’s disclosure that a hotel could send the PEAD an encrypted electronic room key, an airline or movie theater can issue an encrypted electronic ticket, and a Supermarket can “issue coupons” and “[w]hen the user shops in the Supermarket, he can present the coupons over the point of sale counter through the wireless network and Internet.” *Id.* at 60 (citing Ex. 1004 ¶¶ 104–107). Petitioner notes that “the only difference between the PEAD embodiment that includes the coupon functionality and the PEAD embodiment for performing POS transactions is the addition of a scanner in the PEAD.” *Id.* at 60 (citing Ex. 1004, Figs. 6A, 12A, ¶ 113). Petitioner, thus, concludes, and Dr. Bederson testifies, that “a PEAD for conducting POS transactions that includes Wang’s coupon functionality would have been a predictable variation that a POSITA would have been able to implement.” *Id.*; Ex. 1003 ¶ 77.

Claims 16–18, 20, 22–24, 26, and 27 depend from claim 15 and recite limitations commensurate with claims 2–4, 6, 8, 9, 10, 12, and 13. Ex. 1001, 10:23–33, 10:37–39, 10:41–51, 10:56–61. Similarly, claim 19 depends from claim 10 and additionally recites the same limitation as claim 5. *Id.* at 10:34–36.

Claim 25 depends from claim 15 and recites “wherein a terminal associated with a point of sale at the commercial establishment generates a code to be entered in the phone to further the transaction,” which as discussed above, is also recited by claim 1. Ex. 1001, 10:52–55.

Patent Owner does not specifically address Petitioner’s challenges to the above dependent claims. *See* PO Resp. Having considered and weighed the entirety of the evidence, we determine that Petitioner has proved by a

preponderance of the evidence that claims 2–6, 8–13, 16–20 and 22–27 are unpatentable under 35 U.S.C. § 103(a) over the combination of Wang, Dua, and Yong

III. CONCLUSION⁹

For the foregoing reasons, we are persuaded that Petitioner establishes by a preponderance of the evidence that claims 1–6, 8–13, 15–20, and 22–27 of the '578 patent have been shown to be unpatentable.

In summary:

Claims	35 U.S.C. §	References/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–6, 8–13, 15–20, 22–27	103	Wang, Duo, Yong	1–6, 8–13, 15–20, 22–27	

⁹ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. §§ 42.8(a)(3), (b)(2).

IV. ORDER

In consideration of the foregoing, it is hereby
ORDERED that claims 1–6, 8–13, 15–20, and 22–27 of the '578
patent have been shown to be unpatentable under 35 U.S.C. § 103; and
FURTHER ORDERED that, because this is a final written decision,
parties to this proceeding seeking judicial review of our Decision must
comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2024-00731
Patent 8,270,578 B2

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