

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner

v.

PAUL PONIATOWSKI,
Patent Owner

Inter Partes Review Case No. IPR2024-00731
U.S. Patent No. 8,270,578

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 8,270,578**

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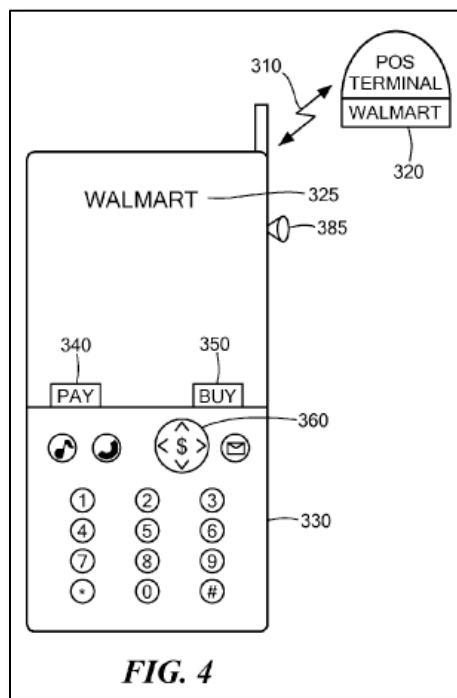
I. INTRODUCTION

Petitioner Apple Inc. (“Petitioner”) requests *Inter Partes* Review (“IPR”) of Claims 1–6, 8–13, 15–20, and 22–27 (collectively, the “Challenged Claims”) of U.S. Patent No. 8,270,578 (the “’578 Patent”) (Ex. 1001).

II. THE ’578 PATENT

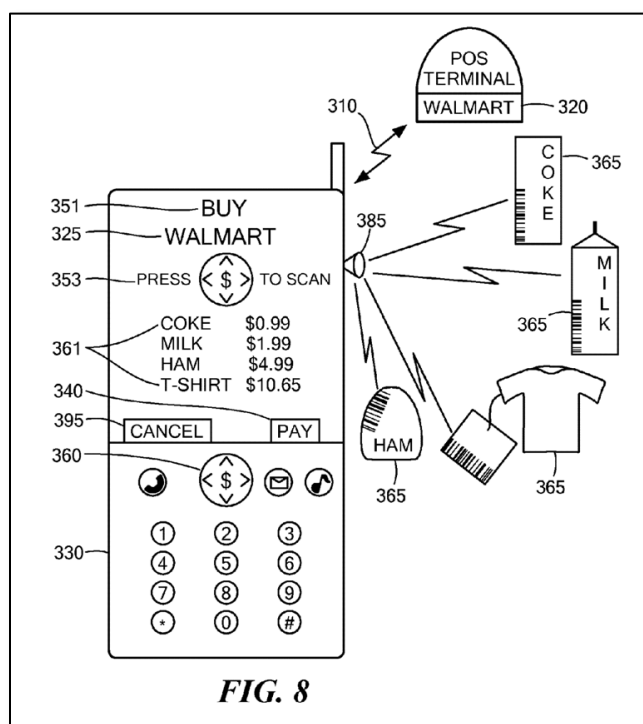
A. The ’578 Patent’s Alleged Invention

The ’578 Patent describes commercial transactions conducted between a mobile device (e.g., a mobile phone) and a commercial establishment. ’578 *Patent*, Abstract. The ’578 Patent’s Fig. 4 illustrates an exemplary mobile phone used to make a purchase from a commercial establishment via a Point-of-Sale (POS) terminal within the establishment:



Id., Fig. 4, 6:49–50 (describing the same).

“A portable telephone **330** equipped with an optical input **385**, such as a photo camera or scanner, includes a dedicated main actuator **360**, labeled in the illustrated embodiment with a suitable currency symbol, such as “\$”. . . . Software 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.*, 6:56–67. When shopping, “the customer aims the optical input **385** towards the barcode or special code **365** of the product or merchandise.” *Id.*, 7:44–46. Upon scanning the product’s barcode, “[t]he price is then added to a retail bill **361**.” This can be done for multiple products/items, “with the end result being a running tally of selected items as shown in FIG. 8.” *Id.*, 7:48–51.



Id., Fig. 8.

“Upon completion of shopping, the customer presses the PAY icon **340** to switch to PAY mode operation.” *Id.*, 7:53–59 (further disclosing “in PAY mode **341**, the phone displays the establishment name **325**, invoice number **347**, list of items **361**, total cost, **343**, and icons OK **375** and NO **390** to either proceed with or cancel the transaction.”), *see also* Fig. 9 (illustrating the same). If the user proceeds with the transaction by pressing an OK icon, the user is then allowed to select a payment type, enter a PIN number, and press a “YES key” to finalize the transaction. Authorization then takes place in a processing center, and a receipt is issued and stored in the user’s phone. *Id.*, 7:60–67, *see also* Figs. 9-11.

B. The ’578 Patent’s Priority Claim

The ’578 Patent issued on September 18, 2012, from U.S. Patent Application No. 12/596,531 (“the ’531 Application”) filed on October 19, 2009. ’578 *Patent*, (21), (22), (45). The ’531 Application was a continuation-in-part of U.S. App. Nos. 12/087,539 (which was a U.S. national stage application of PCT/CA2004/000513 filed on April 7, 2004), attached as Ex. 1007, and 10/407,222 filed on April 7, 2003, attached as Ex. 1008 (collectively, “the Priority Applications”). ’578 *Patent*, (63), 1:5–12. Neither the April 7, 2004 nor April 7, 2003 disclosures provide written description support for the ’578 Patent claims. Accordingly, the ’578 Patent may not claim priority to these earlier filings.

“Patent Owner ‘is not presumed to be entitled to the earlier filing dates of ancestral applications which do not share the same disclosure.’” *MaxLite, Inc. v. Jiaxing Super Lighting Elec. Appliance Co., Ltd.*, IPR2020-00208, Paper 14 at 6 (PTAB June 1, 2021). When challenging a priority claim, the burden of production first falls on Petitioner to raise the issue “by ‘identifying, specifically, the features, claims, and ancestral applications allegedly lacking written description support for the claims based on the identified features.’” *Id.* (quoting *Lupin*, IPR2015-01775, Paper 15 at 11 (citing *Focal Therapeutics*, IPR2014-00116, Paper 8 at 10)).

Neither of the Priority Applications provides written description support for an “***optical input***¹ for receiving information concerning ***prices of goods***” or “a ***network hub*** for wireless exchange of information ***between a commercial establishment and said mobile phone within the boundaries of the establishment***” limitations of independent Claims 1 and 15. Nor do the Priority Applications provide written description support for “***a terminal associated with a point of sale*** at the commercial establishment [that] generates a code to be entered in the phone to further the transaction” limitation of Claim 1. This is not surprising. Neither of the Priority Applications was directed to financial transactions within a commercial establishment. Instead, the Priority Applications described “audio/visual

¹ All emphases added unless noted otherwise.

information dissemination system[s][,]" which facilitated transactions between consumers and advertisers over the television using their telephones. Ex. 1007, 124–35; Ex. 1008, at 554–67. The financial transaction limitations for facilitating a transaction within a commercial establishment in the Challenged Claims were not disclosed until the '531 Application was filed on October 19, 2009. Ex. 1002, 1–5; 122–26; 138–43.

As to the “optical input” limitation, the Priority Applications do not disclose an optical input at all, let alone an optical input “for receiving information concerning prices of goods[.]” Indeed, the Priority Applications expressly disclose that users learn the price from seeing the advertisement on externally located TV screens. Ex. 1007, 130, 133–34; Ex. 1008, at 559, 562–63. They simply contain no disclosure of an “optical input” as claimed and disclosed (*e.g.*, photo camera or scanner) in the '578 Patent. Ex. 1001, at 6:56–57.

As to the “network hub” limitation, 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. Ex. 1007, 128–29; Ex. 1008, at 557–58. The Priority Applications include no disclosure or suggestion of a network hub for the wireless exchange of information *between* a commercial establishment and mobile phone, or that the exchange occurs *within the boundaries* of the establishment. *Id.*

Further evidencing the lack of written description for the “optical input” and “network hub” limitations, the Patent Office twice rejected arguments that either limitation finds written support in the Priority Applications. During prosecution of a continuation application of the ’578 Patent, Patent Owner attempted to traverse two prior art references, arguing that both the “optical input” and “network hub” limitations were entitled to claim priority to the PCT application’s 2004 priority date. The examiner rejected Patent Owner’s priority argument during an examiner interview. Ex. 1009, 168. As the examiner explained, “the PCT reference submitted on 4/15/2013 does not teach all the claimed limitations of claim 1. As a result, 10/19/2009 is the earliest priority date afforded to the pending claims.” *Id.* Patent Owner elaborated on the examiner’s position as follows: “As best understood, the examiner regards **the optical input and the hub** as not being disclosed in Applicant’s U.S. application 12/087,539. It was for this reason that the examiner cited [the later-filed prior art reference].” *Id.* at 178. The examiner correctly rejected Patent Owner’s priority arguments, relying on the later-filed prior art reference in a subsequent final office action against the pending claims—a rejection that was ultimately affirmed by both the PTAB and the Court of Appeals for the Federal Circuit. *Id.* at 232, 272, 498–504, 516–23, 540–47.

Finally, as to the “terminal associated with a point of sale . . . generates a code” limitation, the Priority Applications do not describe any terminals associated

with a point of sale, let alone teach or suggest a terminal that generates a code to further a transaction. Ex. 1007, 124–37; Ex. 1008, at 554–67.

Because the Priority Applications do not provide written description support for at least the “optical input” and “network hub” limitations of Claims 1 and 15 or for the “terminal associated with a point of sale” limitation of Claim 1, the ’578 Patent may not claim priority prior to the ’531 Application’s filing. *New Railhead Mfg., L.L.C. v. Vermeer Mfg. Co.*, 298 F.3d 1290, 1296 (Fed. Cir. 2002). Accordingly, Petitioner applies October 19, 2009 as the priority date for the Challenged Claims. Petitioner reserves its right to respond to any attempt by Patent Owner to establish written description support in the Priority Applications. *Tech Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1328 (Fed. Cir. 2008).

C. The ’578 Patent’s Prosecution

A non-final office action issued on April 19, 2012, rejecting all pending claims (claims 18–33) as anticipated or obvious in view of several prior art references. ’578 *File History* (Ex. 1002), 200–09. Among the rejections, pending claims 18–20, 23, 28–31, and 33 were rejected as anticipated by U.S. Patent No. 6,577,861 to Ogasawara. *Id.* at 201–03. In response, the Patent Owner elected not to amend the claims, arguing instead that the claims as written are not anticipated by Ogasawara. *Id.* at 215–22.

A second office action rejected all claims except pending claims 28 and 29, which the examiner determined “would be allowable if rewritten in independent form[.]” *Id.* at 227–37. In response, the applicant amended pending independent claim 18 to add in the limitation of pending claim 29, requiring “a terminal associated with a point of sale at the commercial establishment [that] generates a code to be entered in the phone to further the transaction.” *Id.* at 246. The applicant further replaced pending independent claim 33 with new independent claim 34 that mirrored the limitations of pending independent claim 18 and added the allowable limitation of pending claim 28, requiring “actuation of the dedicated actuator causes display of a button to consummate a commercial transaction. *Id.* at 247. A notice of allowance followed thereafter. *Id.* at 255.

D. A Person of Ordinary Skill in the Art

A person of ordinary skill in the art (“POSITA”) at the time of the ’578 Patent 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. Additional education or experience might substitute for the above requirements. *Dec.*² (Ex. 1003), ¶¶ 35–37.

² All citations to “Dec.” are to paragraph numbers in Ex. 1003, Declaration of Dr. Ben Bederson.

III. 37 C.F.R. § 42.104 REQUIREMENTS

A. Grounds for Standing Under 37 C.F.R. § 42.104(a)

Petitioner certifies the '578 Patent is available for IPR and Petitioner is not barred or estopped from requesting IPR challenging the claims of the '578 Patent. Petitioner is not the owner of the '578 Patent, has not filed a civil action challenging the validity of any claim of the '578 Patent, and this petition is filed less than one year after the earliest possible date that Petitioner could be considered to have been served with a complaint alleging infringement of the '578 Patent.³

B. Challenges Under 37 C.F.R. § 42.104(b) and Relief Requested

In view of the prior art and evidence presented, the Challenged Claims of the '578 Patent are unpatentable and should be cancelled. 37 C.F.R. § 42.104(b)(1). Based on the prior art identified below, IPR of the Challenged Claims should be granted. 37 C.F.R. § 42.104(b)(2).

Proposed Ground of Unpatentability	
<u>Ground 1</u>	Claims 1–6, 8–13, 15–20, and 22–27 are obvious under pre-AIA 35 U.S.C. § 103(a) over <i>Wang</i> in view of <i>Dua</i> and in further view of <i>Yong</i> .

³ The district court recently determined in the parallel litigation that Petitioner was not properly served with the complaint alleging infringement of the '578 Patent, dismissing that matter without prejudice. This petition is still filed more than one year before May 31, 2023, the earliest date that Patent Owner contends that it served Petitioner with a complaint.

Sections V identifies where each element of the Challenged Claims is found in the prior art. 37 C.F.R. § 42.104(b)(4). The exhibit numbers of the supporting evidence relied upon to support the challenges are provided in the Appendix of Exhibits, and the relevance of the evidence to the challenges raised are provided in Section V. 37 C.F.R. § 42.104(b)(5). Exhibits 1001–1022 are also attached.

C. Claim Construction Under 37 C.F.R. § 42.104(b)(3)

In this proceeding, claims are interpreted under the same standard applied by Article III courts (*i.e.*, the *Phillips* standard). *See* 37 C.F.R. § 42.100(b); *see also* 83 Fed. Reg. 197 (Oct. 11, 2018); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*). Under this standard, words in a claim are given their plain and ordinary meaning as understood by a POSITA in view of the patent and file history. *Phillips*, 415 F.3d at 1312–13. Petitioner submits that all terms should be given their plain and ordinary meaning⁴ consistent with the *Phillips* standard. Petitioner does not waive any argument in any litigation that claim terms in the '578 Patent are indefinite or that additional terms require express construction.

1. “Receiving information concerning the prices of goods”

Claims 1 and 15 both require “an optical input for receiving information concerning prices of goods[.]” ’578 Patent, Claims 1, 15. The specification describes

⁴ For certain terms, Petitioner explains the plain and ordinary meaning in light of the intrinsic record.

an optical input (e.g., that may be a scanner, reader, or camera) for capturing either a barcode or special price code corresponding to goods. *Id.*, 7:45–49 (“[T]he customer aims the optical input **385** towards the barcode or special code **365** of the product or merchandise[,] . . . actuates the main actuator **360** to scan the barcode **365**[, and] [t]he price is then added to a retail bill **361**.”); *see also id.* at 9:5–11 (describing receiving “a barcode or special price code using a mobile phone equipped with a scanner, reader, or camera”). As set forth below, the plain and ordinary meaning of this limitation in light of the full intrinsic record captures both examples—an optical input (1) that directly receives price information (e.g., obtaining the price via a special price code) or (2) that indirectly receives pricing information (e.g., capturing a barcode corresponding to the goods then using the barcode to lookup pricing information from a server).

The specification provides only a high-level description of an optical input that receives a barcode or special price code corresponding to goods and does not elaborate further on the meaning of “information **concerning** prices of goods[.]” However, the applicant made clear twice—during prosecution of the ’578 Patent and prosecution of a child application—that “receiving information concerning prices of goods” is intended to capture both scenarios in which price information is received directly or indirectly.

During the '578 Patent's prosecution, the examiner twice rejected the "optical input" limitation in view of Ogasawara. Ex. 1002, 201–03, 228–36. The examiner characterized Ogasawara's relevant teachings as follows:

When a customer scans an item, the telephone sends the scanned bar code information to the server. The server then preferably returns a description of the item and information. This item description and price information is displayed on the telephone's display.

Id. at 231. The applicant never disputed Ogasawara's teachings on this point and thus conceded that Ogasawara's indirect method of obtaining pricing data from a server using the barcode information is captured by the plain and ordinary meaning of the claimed "optical input" limitation. Indeed, the applicant acknowledged that Ogasawara "describe[s] a system in which a store server downloads an application to a conventional mobile phone" and in which the "mobile phone connects to a bar code scanner" such that "[t]he bar code scanner and the application cooperate to enable the phone to be used as a 'point of purchase electronic shopping terminal.'"

Id. at 214. Thus, Patent Owner's express statements further support that the plain and ordinary meaning of the limitation "receiving information concerning prices of goods" captures both scenarios in which price information is received directly (e.g., obtaining the price via a special price code) or (2) indirectly (e.g., capturing a barcode corresponding to the goods then using the barcode to lookup pricing information from a server).

Similarly, during the prosecution of a continuation application of the '578 Patent, Application No. 13/559,194 (“the '194 Application”), the applicant expressly argued that barcode teachings fall within the scope an “optical input” limitation identical to the “optical input” limitation in the Challenged Claims. Specifically, the examiner rejected the claims as obvious over a set of references that were prior art only if the claims *were not* entitled priority to either of the Priority Applications. *'194 Application File History* (Ex. 1009), 159–63. The applicant attempted to overcome this rejection by arguing that the Priority Applications provided written description support for the claimed “optical input.” *Id.* at 178–94. Applicant argued “the optical input of claim 1 would have been a variation or adaptation that would have been obvious” in view of the Priority Applications disclosures. *Id.* at 188, 191 (same). In support, the applicant provided a short history of the “barcode system” and argued that “use of an optical device like scanner, instead of a visually/manually inputting data via keypad, as recited in the limitation ‘an optical input for receiving information concerning prices of goods,’ would thus have been an obvious variant or adaptation of what is disclosed in the PCT application and available prior art[.]” *Id.* at 191. The applicant’s argument unambiguously tied barcode scanning technology to the claimed optical input.⁵ In so doing, the applicant clarified that the

⁵ While the Examiner ultimately rejected the applicant’s argument, the Examiner

plain and ordinary meaning of the claimed optical input does, in fact, capture systems that receive pricing information indirectly, e.g., via scanned barcodes that are subsequently used to look up prices.

IV. PRIOR ART

A. Overview of Wang

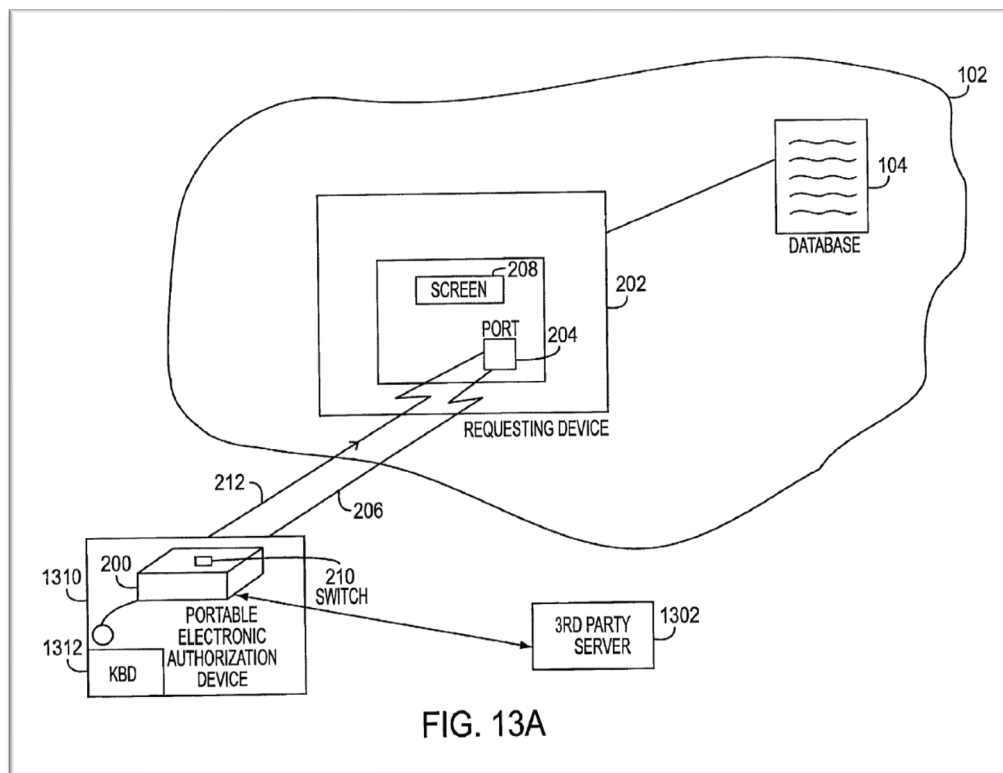
U.S. Patent Publication No. 2002/0023215 to Wang, et al. (“*Wang*”) was neither cited nor considered during prosecution of the ’578 Patent. *See generally* ’578 FH. *Wang* was filed February 23, 2001, and published on February 21, 2002, qualifying as prior art at least under 35 U.S.C. § 102(b) (Pre-AIA).⁶ *Wang* (Ex. 1004), (22), (43).

In general, *Wang* teaches a method and apparatus “for approving a transaction request between an electronic transaction system and a portable electronic authorization device (PEAD) carried by a user[.]” *Wang*, Abstract, [0002], [0003] (teaching “[e]xamples of electronic transactions include transactions conducted via ..., automated point-of-sale systems, ... and the like”).

never challenged the applicant’s position that barcode scanning was within the scope of the “optical input” limitation. *See* Ex. 1009, 208–17.

⁶ Even if the Board were to determine that the Challenged Claims are entitled to the earliest priority date of the Priority Applications (April 7, 2003), *Wang* is still prior art to the Challenged Claims under at least pre-AIA 35 U.S.C. § 102(b).

Wang teaches the “PEAD 200 may be implemented using a general purpose portable computing device, such as any of the miniaturized portable computers, personal digital assistants (PDA’s) or portable phones that are currently popular.” *Id.*, [0067] (further teaching that the portable phones may be those “such as the Nokia 7110 Media Phone, Ericsson R280 SmartPhone or Motorola i1000 plus ...”). Fig. 13A depicts an electronic transaction system that includes the PEAD 200 (e.g., portable phone) in wireless communication with an electronic transaction system 102 (e.g., point of sale system):



Id., Fig. 13A, [0121] (describing the same), [0037]–[0039] (describing Fig. 2. which Fig. 13A builds on).

Wang teaches a typical transaction that takes place between the PEAD and a POS terminal located at a check-out counter, where the user of the PEAD enters “merchandise bar code number(s) to the PEAD through the keypad or scanner on the PEAD and generate(s) transaction information [...]” *Id.*, [0113]. Then upon the PEAD establishing a communication link with the POS terminal, the PEAD will display “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.*

Both *Wang* and the '578 Patent are directed to using a mobile device to conduct a commercial transaction. *Compare Wang*, [0113] (describing an “implementation, called a Point-of Sale Transaction,” where “the PEAD can perform the Point-of-Sale Transaction through the wireless network and Internet[,]” and establish communications with the Point-of-Sale system), *with '578 Patent*, Abstract (describing a mobile phone apparatus for engaging in wireless commercial transactions and exchanging information with said commercial establishment via a network hub). As such, *Wang* is in the same field of endeavor and is analogous art to the '578 Patent. *Dec.*, ¶¶ 45–46.

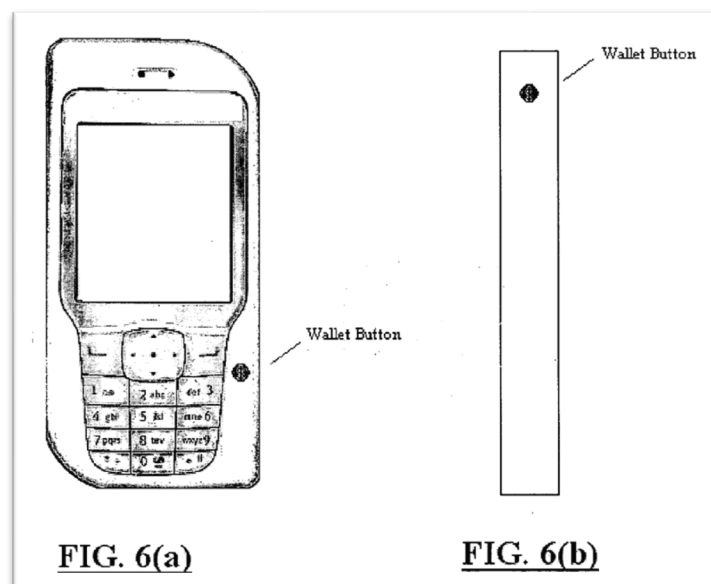
B. Overview of Dua

U.S. Patent Publication No. 2006/0165060 to Dua (“*Dua*”) was neither cited nor considered during prosecution of the '578 Patent. *See generally '578 FH. Dua*

was filed January 21, 2005, and published July 27, 2006, qualifying as prior art at least under 35 U.S.C. § 102(e). *Dua* (Ex. 1005), (22), (43).

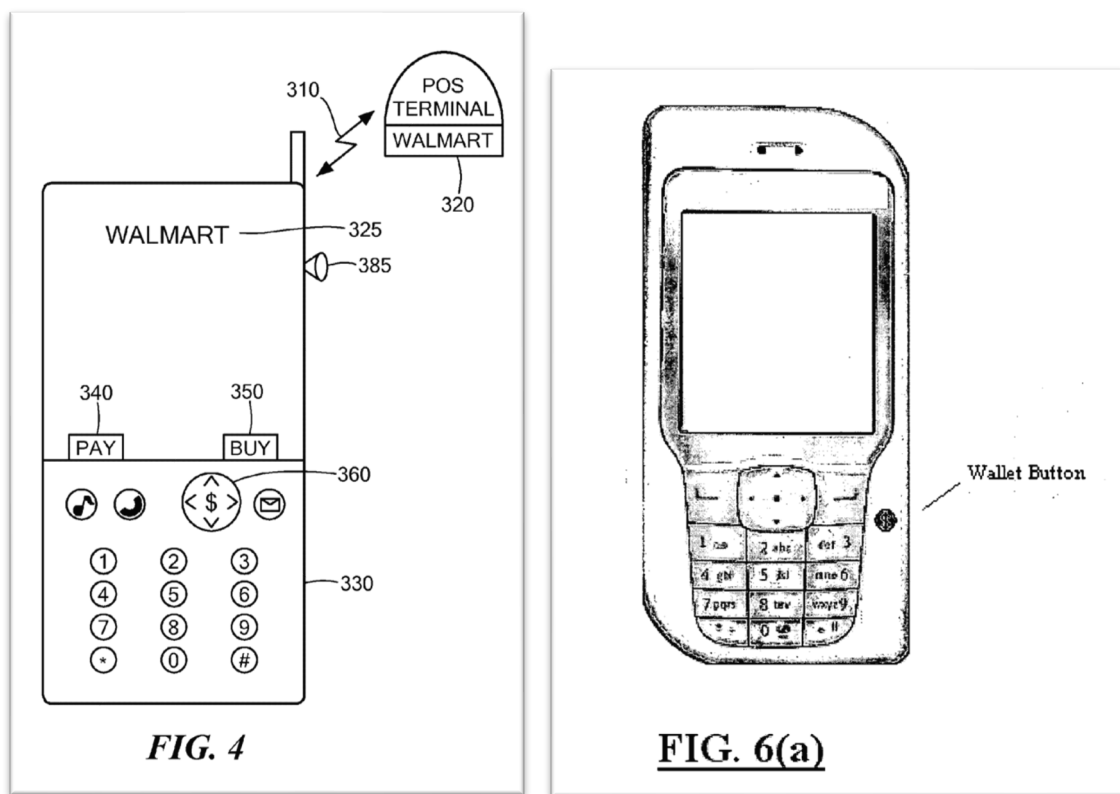
In general, *Dua* teaches a “system and methodology for conducting financial and other transactions using a wireless device.” *Dua*, Abstract. *Dua* teaches that on the mobile device used in a transaction, there are application-specific buttons that “can be any size, shape, or color [...]” *Id.*, [0396] (further teaching that such buttons “may also have iconic or text representations either on them or next to them in order to signal their function.”).

Figs. 6(a) and 6(b) depict a mobile device for use in financial transactions having these application-specific buttons for performing functions related to a financial transaction[:]



Id., Figs. 6(a) and 6(b), [0387] (describing the same).

Both *Dua* and the '578 Patent are directed to using a mobile device to conduct a commercial transaction. Compare '578 Patent, 6:56–59(teaching “[a] portable telephone 330 equipped with an optical input 385, such as a photo camera or scanner, includes a dedicated main actuator 360, labeled in the illustrated embodiment with a suitable currency symbol, such as “\$”.”), with *Dua*, [0396] (teaching the mobile device has application-specific buttons on the front or side that has “iconic or text representations” to indicate their functions). Also, compare '578 Patent's Fig. 4 button 360 with *Dua*'s Fig. 6(a) wallet button:



'578 Patent, Fig. 4; *Dua*, Fig. 6(a) (respectively). Accordingly, *Dua* is in the same field of endeavor and is analogous art to the '578 Patent. Dec., ¶¶ 47–48.

C. Overview of Yong

Korean Patent Publication No. 20070063899 to Se Yong Noh *et al.* (“Yong”) was neither cited nor considered during the prosecution of the ’578 Patent. *See generally* ’578 FH. Yong was published June 20, 2007, qualifying as prior art under at least 35 U.S.C. § 102(b) (pre-AIA). Yong (Ex. 1006), (43).

Yong teaches a mobile terminal with an integrated barcode scanner that a user would use while shopping in a store in order to scan products they wished to purchase. *Id.* at 13, Figs. 1, 5.

Both Yong and the ’578 Patent are directed to using a mobile device to conduct a commercial transaction. *Compare* ’578 Patent, Abstract, Fig. 4, 6:49–67, with Yong, (57) Abstract, (“[T]he commodity code inputting terminal of the present invention is configured to comprise a main body unit that comprises a main unit and a handle unit that is bent at the rear end of the main unit and extends downward to form an external shape”), 13 (“The disbursed commodity code input system comprises a commodity code input terminal 100 and a store POS network 200. The commodity code input terminal 100 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.”), Figs. 1, 5. As such, Yong is in the same field of endeavor and is analogous art to the ’578 Patent. *Dec.*, ¶¶ 49–50.

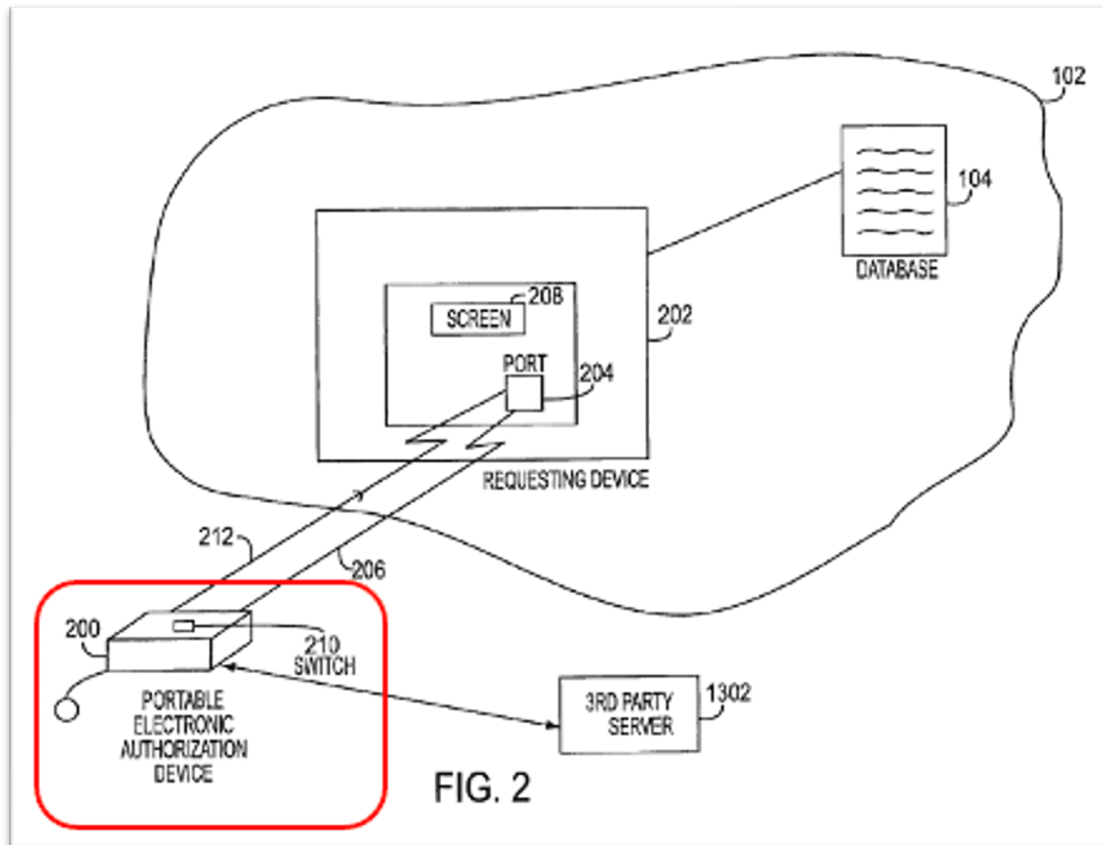
V. GROUND 1: CLAIMS 1–6, 8–13, 15–20, AND 22–27 ARE OBVIOUS OVER *WANG* IN VIEW OF *DUA* IN FURTHER VIEW OF *YONG*

Like the Challenged Claims, *Wang* teaches a mobile phone capable of wirelessly communicating with a commercial establishment to facilitate commercial transactions and is equipped with a scanner for obtaining product barcodes that are used to generate transaction invoices. While *Wang* does not expressly teach the claimed “dedicated actuator” or that its wireless communication with the commercial establishment is through a “network hub,” both these features were well-known and commonplace in the art. For example, *Dua* teaches a mobile phone with a dedicated wallet button that launches a payment application and enables the device to communicate with a POS terminal. Additionally, *Yong* expressly teaches a network hub for facilitating commercial transactions between a mobile device and commercial establishment. As set forth below, a POSITA would have been motivated to modify *Wang*’s apparatus with *Dua*’s wallet button and to implement *Wang*’s wireless communications via a network hub pursuant to *Yong*.

A. Claim 1(Pre): An apparatus for engaging in wireless commercial transactions, said apparatus comprising:

To the extent the preamble is limiting, *Wang* teaches an apparatus for engaging in wireless transactions. Specifically, *Wang* teaches “*a portable electronic authorization device (PEAD) 200, representing the apparatus for securely*

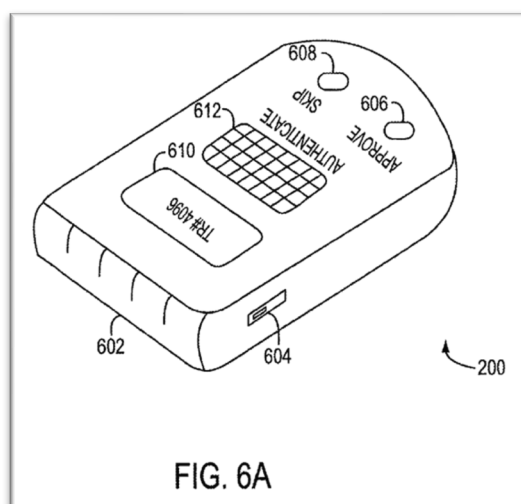
approving transactions conducted vis-à-vis an electronic transaction system[,]” as shown in Figure 2:



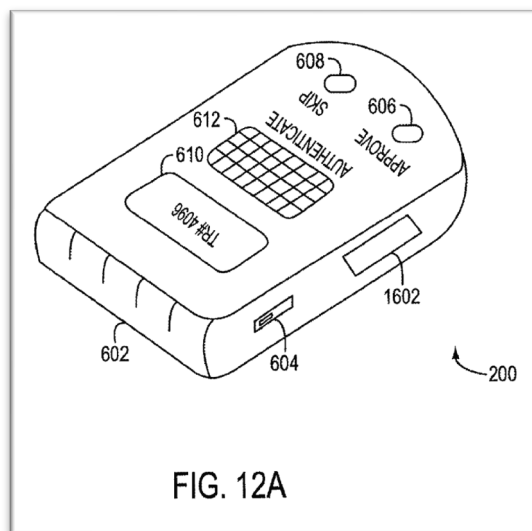
Wang, [0036], Fig. 2 (annotated). The PEAD includes port **204** which “may represent a wireless port for facilitating wireless communication” with requesting device **202**. *Id.* at [0038] Expressly disclosing commercial transactions, *Wang* teaches that requesting device **202** may be any number of devices “for permitting the user to transact business with the electronic transaction system” and that “[t]he proposed transaction may be, for example, a sale transaction of a particular item for a certain amount of money.” *Id.*, [0037]; *see also id.* at [0113]–[0115] (expressly teaching Point-of-Sale (“POS”) commercial transactions).

B. Claim 1(a): a mobile phone equipped with

Wang teaches that the “PEAD 200 can be built-in a portable phone such that port **602** can be a wireless communication and/or infrared port, display **610** can be a display on the portable phone, and buttons **606** and **608** are button keys on the portable phone”:



Wang, [0072], Fig. 6A; *see also id.* at [0067] (“PEAD **200** may be implemented using a general purpose portable computing device, such as . . . portable phones that are currently popular”); [0108] (“One of the preferred embodiments is using an Internet enabled cellular telephone (e.g., a web phone) . . . to perform the above applications.”) In one embodiment, “the PEAD can perform [a POS] Transaction through [a] wireless network and Internet.” *Id.* at [0113]. Figure 12A depicts “an exemplary PEAD that can be used as the [POS] Transaction device including a scanner **1602**[,]” which may also be a mobile or cellular phone:



Id. at Fig. 12A, [0113] (noting the scanner-equipped PEAD may be a cellular phone, identifiable by its “cellular phone number”).

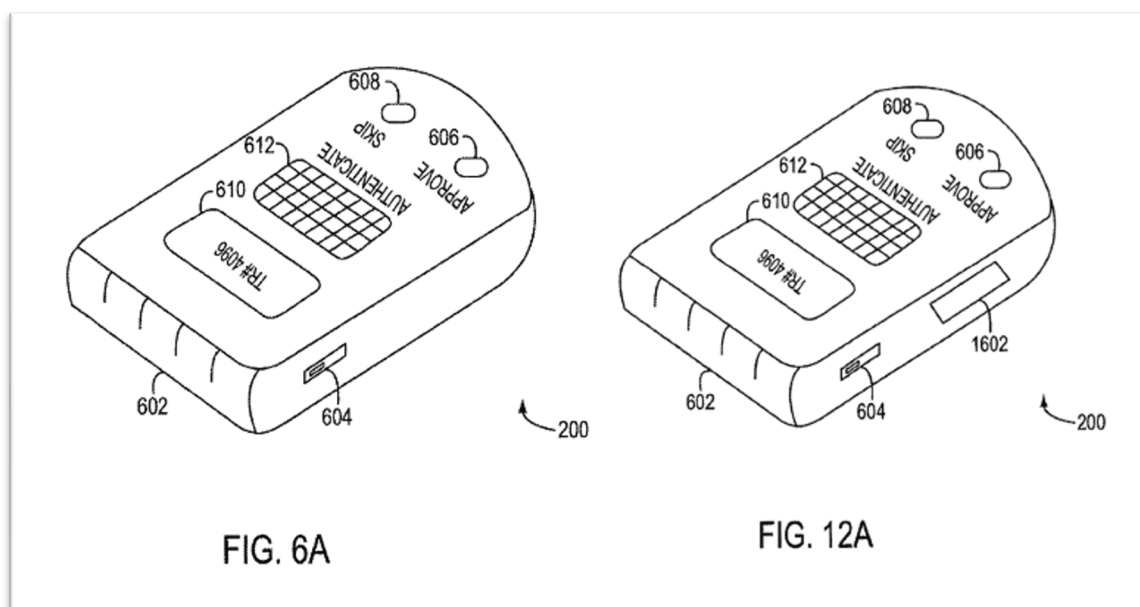
C. Claim 1(a)(i): a dedicated actuator for initiating a commercial transaction, and

The '578 Patent does not expressly define what types of events constitute “initiating” a commercial transaction for purposes of the claimed invention. For a number of reasons, however, the intrinsic record supports interpreting “initiating” a commercial transaction to capture the process of establishing a connection between the mobile device and the checkout terminal. First, dedicated main actuator **360** is the only actuator the '578 Patent describes as “dedicated.” Ex. 1001, 6:56–59. When this dedicated actuator **360** is engaged at the start of a commercial transaction, it “establishes a connection between the telephone **330** and the POS terminal **320** of a particular establishment.” *Id.* at 7:1–3 (describing the start of a process to acquire goods and services in an establishment); *see also id.* at 8:3–4 (same in the context of

a dining establishment). Accordingly, per the '578 Patent's express teachings, initiating a commercial transaction by engaging the "dedicated" actuator involves establishing a connection between the mobile device and checkout terminal. *Dec.*, ¶ 53. Second, certain dependent claims support interpreting the claimed dedicated actuator limitation of Claim 1 to at least capture the '578 Patent's description of dedicated actuator 360. For example, Claim 8 recites, "wherein the dedicated actuator comprises a button labeled with a *symbolic indication* of a function thereof." *Id.* at Claim 8. Only actuator **360** is described as being labeled with a symbolic indication of its function. *Id.* at 6:56–59 (teaching that actuator **360** is "labeled in the illustrated embodiment with a suitable currency symbol, such as '\$'"). Similarly, Claims 10 and 11 respectively require that actuation of the dedicated actuator "causes information identifying the commercial establishment to be displayed on the mobile phone" and "causes display of a button to consummate a commercial transaction." *Id.* at Claims 10, 11. Again, the '578 Patent expressly ties these functionalities to actuator **360**. *See id.* at 7:3–4 (teaching that actuating main actuator **360** "causes the name of the establishment [] **325** to be displayed"), 8:5–6 (same), 7:4–7 (teaching that actuating main actuator **360** "causes additional navigational icons, such as a PAY icon **340** and a BUY actuator **350** to be displayed"), 8:6–8 (same). Thus, a POSITA would have understood that the claimed "initiating a commercial transaction" at least included establishing the connection

between the mobile phone and a POS terminal—the means by which actuator 360 initiates a commercial transaction in each of the '578 Patent's relevant embodiments. *Dec.*, ¶ 53.

Wang teaches that its standalone PEAD has physical buttons dedicated to specific functions. Specifically, as shown in both Figs. 6A and 12A, such dedicated buttons include an on/off switch 604, a skip button 608, and an approve button 606:



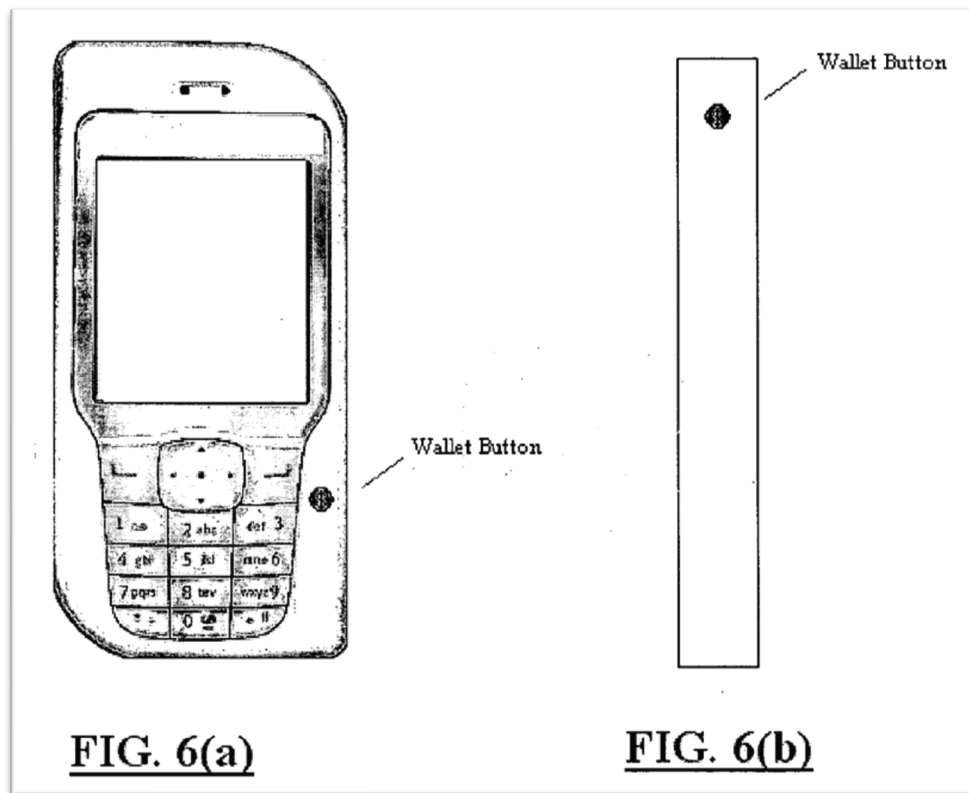
Id., Figs 6A and 12A. As *Wang* explains, “small on/off switch **604** permits the user to turn off the PEAD to conserve power when not in use[,]” “[a]pprove button **606** permits the user to signify approval of a proposed transaction[,]” and “skip button **608** permits the user to indicate rejection of a particular transaction.” *Id.*, [0071]. *Wang* further teaches that “[t]he PEAD **200** can be built-in a portable phone” where “buttons **606** and **608** are button keys on the portable phone key pad.” *Id.*, [0072].

In *Wang's* POS transaction embodiments, the PEAD carries out the transaction “through the wireless network and Internet.” *Id.*, [0113]. To facilitate these transactions, the PEAD must “establish [a] communication link with the [POS] system through the wireless network and Internet[.]” *Id.* In one example, *Wang's* PEAD establishes this link automatically “through local wireless port [such as] the infrared port or a Bluetooth (short range wireless RF) port.” *Id.*; *see also id.*, [0114] (“[I]f the [POS] terminal also has short range wireless communication capability . . . the described transaction can be conducted locally through PEAD’s Bluetooth port or infrared port using the same method.”).

While *Wang* expressly teaches certain dedicated buttons (e.g., for *approving* or *disapproving* a commercial transaction), *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). However, *Dua* expressly teaches a dedicated actuator that enables communication with a POS terminal. *Dec.*, ¶¶ 54–55. As set forth below, a POSITA would have been motivated to implement *Wang's* device with *Dua's* dedicated wallet button that, when engaged, enables *Wang's* device to establish a wireless connection with the POS terminal.

Dua incorporates “a single button embedded on the wireless device that can be used to activate the wallet application and to control the transmission of information to an external device via RFID (or some other short-range

communication mechanism).” *Dua*, at [0383]. In one embodiment, “when the ‘wallet button’ is pressed and released, the wallet application launches the wallet application and ***enables communication*** via the RFID interface in the device; RF communication might be enabled for a period of 30 seconds during which time the device should be placed in proximity of the reader to allow for transmission[.]” *Id.* *Dua*’s dedicated wallet button is shown in Figures 6(a) and 6(b):



Id., Figs. 6(a) and 6(b), [0387] (“FIGS. 6(a) and 6(b) are graphical representations showing examples of where a ‘wallet button’ might be situated and how it might appear on the device.”).

For a number of reasons, a POSITA would have found it obvious and been motivated to modify *Wang*'s device with *Dua*'s dedicated wallet button for initiating the process of establishing a wireless link with the POS terminal.

First, *Dua*'s dedicated "wallet button" would have provided practical implementation benefits to *Wang*'s embodiments in which the PEAD is implemented in a mobile device—the embodiments relied upon herein. When discussing its standalone PEAD embodiment, *Wang* suggests that the PEAD is *always* "searching" for connections unless powered off. *Id.*, at [0074] ("Power switch 664 permits the user to power off PEAD 200 when not in use to conserve power and to prevent accidental approval."). *Wang* does not expressly teach how its mobile-integrated PEAD initiates the process of connecting to a POS terminal, but a POSITA would have understood the always searching approach is undesirable when *Wang*'s PEAD is integrated into a multi-purpose mobile device. *Dec.*, ¶¶ 56–57. Indeed, while turning the device on or off to activate a search function makes sense in a single-function standalone PEAD, it would have a detrimental impact on at least power consumption and user control in a multi-function mobile device. *Dec.*, ¶ 56 (explaining that always searching for a POS terminal would detrimentally increase power usage and would prevent the user from exerting control over when the device looks for a POS terminal with which to connect). Accordingly, when implementing *Wang*'s PEAD in a mobile phone, a POSITA would have been

motivated and found it obvious to employ *Dua*'s wallet button to activate its wireless communication functionality to allow it to establish a link with the POS terminal.

Id. This modification would have allowed *Wang*'s mobile device to disable the PEAD searching process while remaining on and fully functional with respect to non-transaction uses, benefitting both the overall functionality of the device and its power consumption. *Id.* A POSITA would have had a reasonable expectation of success for the combination, at least because *Wang* already includes physical buttons that affect the functionality of the device, and the combination would require only an additional, similar button to be added, per *Dua*, to activate the POS terminal search function, a function already performed (albeit *continually*) in the unmodified *Wang* device. *Id.*

Further, the proposed modification would have allowed a user to exert control over exactly when the PEAD search functionality is enabled, avoiding situations in which wireless communications are inadvertently attempted with other proximate devices and terminals. *Dec.*, ¶ 56. Without such control, a user would be required to power off *Wang*'s device to avoid unwanted attempts to connect with other devices and terminals. *Id.* When *Wang*'s PEAD is integrated into a multi-purpose mobile device, as in this combination, providing the user a dedicated actuator to turn on and off the PEAD functionality provides a significantly better user experience than forcing the user to power off the device in order to disable the PEAD. *Id.*

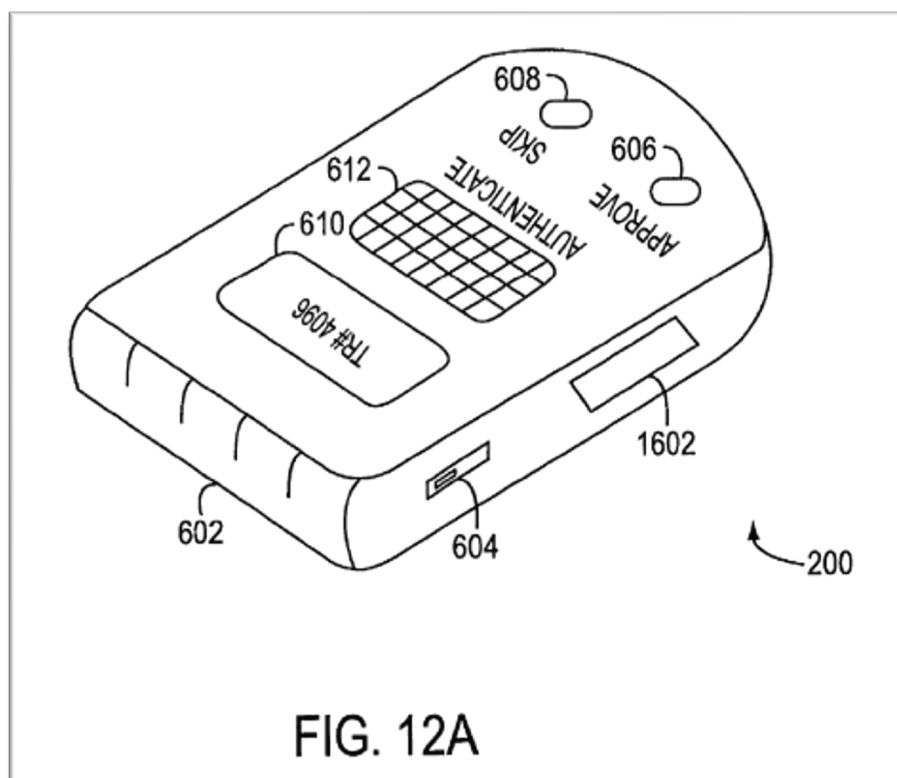
Second, employing *Dua*'s wallet button in *Wang*'s mobile-integrated PEAD would have realized an express benefit proscribed to *Dua*'s wallet button—improved security. *Dec.*, ¶ 57. As *Dua* explains, “[b]ecause of the sensitive nature of information stored in the wallet application, user’s [sic] want to ensure that they have complete control over the transmission of information to an external reader such as a retail point-of-sale.” *Id.*, [0382]. Without this way of controlling the transmission of information, “[a] credential . . . could be read from a wireless device in someone’s pocket by a fraudster carrying a reader that comes in close proximity to the device.” *Id.* [0383]. Because *Dua*'s wallet button “controls activation of the wallet application and transmission of credentials via RF[,]” its use “could eliminate a similar fraud risk.” *Id.* Like *Dua*'s device, *Wang*'s PEAD also contains sensitive user identification data and is capable of automated wireless communication with other devices. *Wang*, [0062] (“Program/data memory **504** stores, among others, the codes which operate PEAD **200** as well as the user identification data and the user’s private key.”), [0113] If the PEAD’s wireless connectivity was always on when implemented in a mobile phone, as *Wang* recommends for its standalone PEAD, it would be vulnerable to the same fraud risk described in *Dua*. *Dec.*, ¶ 57. By incorporating *Dua*'s dedicated wallet button into *Wang*'s mobile phone PEAD, users would be in full control over when to activate the PEAD’s wireless functionality to begin initiating the process of establishing the communication link with a given POS

terminal. *Id.* As in *Dua*, by requiring a user of *Wang's* PEAD to press a dedicated button to enable wireless communication with the POS terminal, the risk of fraudsters carrying a reader and covertly reading the data from user's PEAD is eliminated. *Id.* As a result, *Wang's* PEAD would be improved in the same way as *Dua's* mobile phone—eliminating the risk of fraud. *Id.*

D. Claim 1(a)(ii): an optical input for receiving information concerning prices of goods;

As discussed above in Section III.C.1, this limitation should be construed to capture optical inputs for receiving pricing information directly (e.g., a special price code) or indirectly (e.g., a barcode that can be used to lookup price data for the goods). *Wang* teaches the latter—a mobile-integrated PEAD embodiment with an optical barcode scanner.

An exemplary PEAD for use in POS transactions is shown in Figure 12A:



Wang, FIG. 12A, [0113]. In this embodiment, the PEAD can include “an alternative input device[,]” for example, scanner 1602, “built into the PEAD[,] such as a barcode scanner or OCR reader[.]” *Id.* Among other functions, the scanner can scan “**the merchandise bar code . . . and generate transaction information from the PEAD** rather than generate the transaction information from the [POS] terminal.” *Id.* “Once the link between the PEAD and [POS] 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.* Thus, *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.

With respect to how pricing information is generated, *Wang* further provides guidance in another POS transaction embodiment where the PEAD acts as a self checkout terminal. *Wang*, [0115]. Describing this embodiment, *Wang* explains that “a scanner module” is used to “scan[] in the **UPC code or barcode** using the input device” and that “the PEAD can **generate the receipt with the list of item prices** through the wireless network and Internet **by querying the item price using the barcode as the index for price lookup table which is stored in a server system.**” *Id.* In other words, the PEAD scans an item's barcode and uses the barcode to lookup the item's price in a server system, satisfying this limitation as properly construed. *Id.*; *Dec.*, ¶ 59.

For a number of reasons, a POSITA (1) would have understood that the PEAD of *Wang*'s first POS transaction embodiment (e.g., as described in *Wang*, [0113]) would use an item's scanned barcode as an index to retrieve the item's price from a price lookup table as described by *Wang* at [0115] or (2) would have found it obvious to do so.

First, *Wang* explicitly teaches that both the [0113] and [0115] embodiments are “[POS] Transaction” implementations, that both include a scanner for reading item barcodes, and that both utilize the same user approval and transaction processes.

Wang, [0113], [0115]. Second, *Wang* expressly teaches that both embodiments can access lookup tables on *Wang's* server system. *Id.* at [0113] (“[T]he PEAD can search automatically the closest [POS] terminal according to GPS geometry position and establish the link automatically by using a Location-ID mapping table that maps the proximity of the [POS] terminal location to the unique ID of the [POS] terminal”), [0115] (teaching the device can “connect to the store price table database . . . automatically when the GPS or the equivalent system is used to locate the user position . . . **as described in the previous section**”). A POSITA would have understood the Location-ID mapping table discussed in *Wang's* [0113] embodiment is stored on a server associated with the merchant/store. *Dec.*, ¶ 60 (explaining that maintaining such a table assumes you are connecting to the merchant's/store's system via the Internet and/or wireless network). A POSITA would also have understood *Wang's* teachings to mean that the same wireless connection used to access the Location-ID mapping table provides access to the store price table database. *Id.* Given the overlap between these two embodiments, a POSITA would have understood *Wang* to teach (or at least fairly suggest) that both embodiments use a store price table database to lookup an item's price using that item's scanned barcode, teaching (or rendering obvious) this limitation. *Id.* In the alternative, it would have been obvious to do so in view of the knowledge of a POSITA. Indeed, *Wang* expressly teaches that the mobile-integrated PEAD in its [0113] embodiment

can use the “scanner on the PEAD [to] generate transaction information from the PEAD rather than generate the transaction information from the Point-of-Sale terminal” and that the same “PEAD can display the transaction information including the price[.]” *Wang*, [0113]. A POSITA would have understood that providing this PEAD with access to the store price table database is a straightforward means by which the described PEAD would have converted scanned barcode data into pricing information. *Dec.*, ¶ 61.

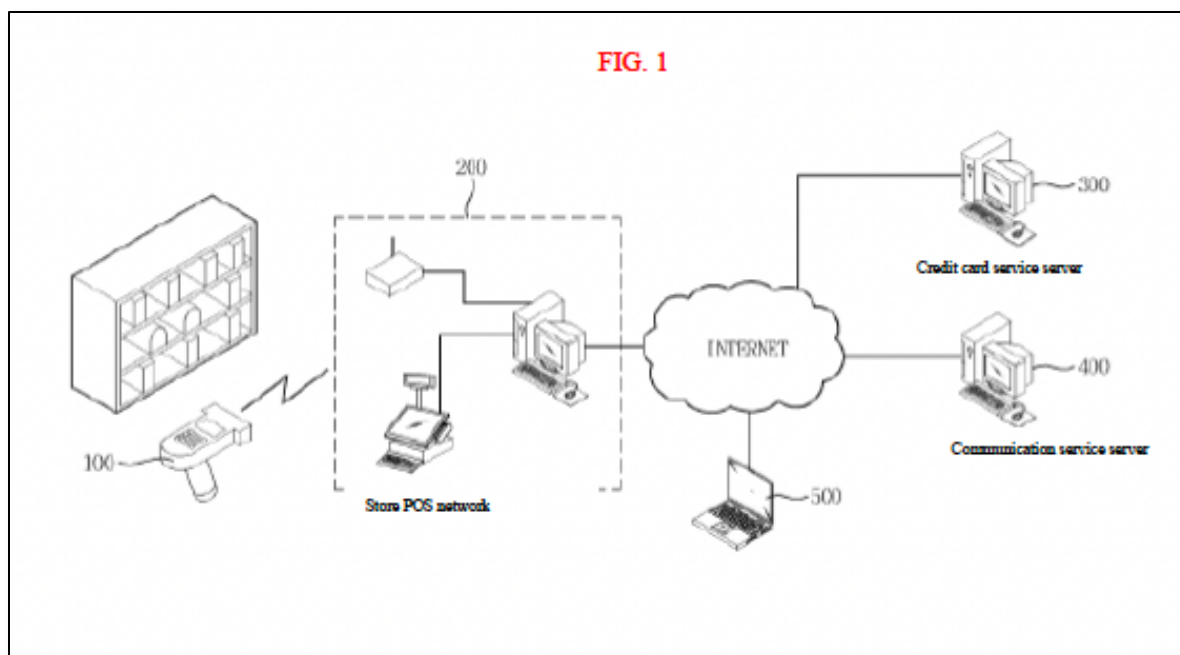
E. Claim 1(b): a network hub for wireless exchange of information between a commercial establishment and said mobile phone within the boundaries of the establishment; and

As explained for Claim 1(a)(ii) above, *Wang* teaches or renders obvious a PEAD that scans an item’s barcode and generates transaction information, including that item’s price, by accessing the store’s price database. *See supra* Claim 1(a)(ii). Accordingly, a POSITA 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). *Dec.*, ¶ 62. However, *Wang* does not expressly teach that this wireless exchange of information occurs through the use of a network hub. It was, however, well known to conduct such wireless transactions through a network hub. *Id.* Indeed, *Yong* expressly teaches wirelessly communicating product and pricing information

between a mobile device and commercial establishment via network hubs. As set forth below, it would have been obvious to implement such a network hub arrangement to support *Wang's* wireless communications.

Yong teaches a user input terminal that scans items for purchase and sends the scanned information to the store's POS network to obtain product information (e.g., product name and price). Specifically, *Yong* teaches **“a method of scanning or photographing the barcode attached to the commodity . . . , and searching the commodity code corresponding to the commodity code information in the memory of the commodity code input terminal or the store POS network[.]”** *Yong*, 11. Moreover, that product code information “include[s] commodity name, commodity price, and advertising information corresponding to the commodity code[.]” *Id.*, 17.

Yong's Fig. 1 depicts the general product code system of the input terminal 100 communicating with the store's POS network 200:



Id., Fig. 1; *see also id.*, 13. The “POS network (200) is installed with . . . a plurality of APs (Access Points) . . . to cover the entire store[.]” *Id.*, 13. The “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.* Thus, *Yong* teaches that a user-operated device used for scanning products for sale will communicate with the store’s POS network via access points contained within the boundaries of the store. Accordingly, a POSITA would have understood that *Yong* teaches a network hub (e.g., access points) within the boundaries of an establishment (e.g., the store) for the wireless exchange of information (e.g., wireless LAN communication) between said commercial establishment and a mobile device within the boundaries of the establishment. *Dec.*, ¶ 62.

A POSITA would have found it obvious and 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. *Dec.*, ¶ 63. Such a modification would have improved *Wang's* system in the same ways as expressly taught by *Yong. Id.* Utilizing *Yong's* APs located throughout the store in *Wang's* POS system would provide broad wireless connectivity between *Wang's* PEAD and the store's POS network, which would have allowed the PEAD to communicate with the POS network at any location within the store and obtain an item's pricing information from *Wang's* lookup table when the user scans that item's barcode. *Id.* Moreover, utilizing a plurality of APs throughout the store would also have had the additional benefit of alleviating network congestion and reducing delays in response time, ensuring users would receive the item's pricing information quickly upon scanning its barcode, enhancing the user's shopping experience. *Id.*

Additionally, WLAN communications would have realized benefits over cellular communications—a form of wireless communications expressly identified by *Wang. Dec.*, ¶ 64 (noting that *Wang* at [0112] describes specific cellular wireless connectivity, including SprintPCS and GTE). Indeed, as of the 2009 priority date, WLANs such as WiFi were widely available and commonplace in commercial establishments to allow customers to connect their mobile phones to the Internet,

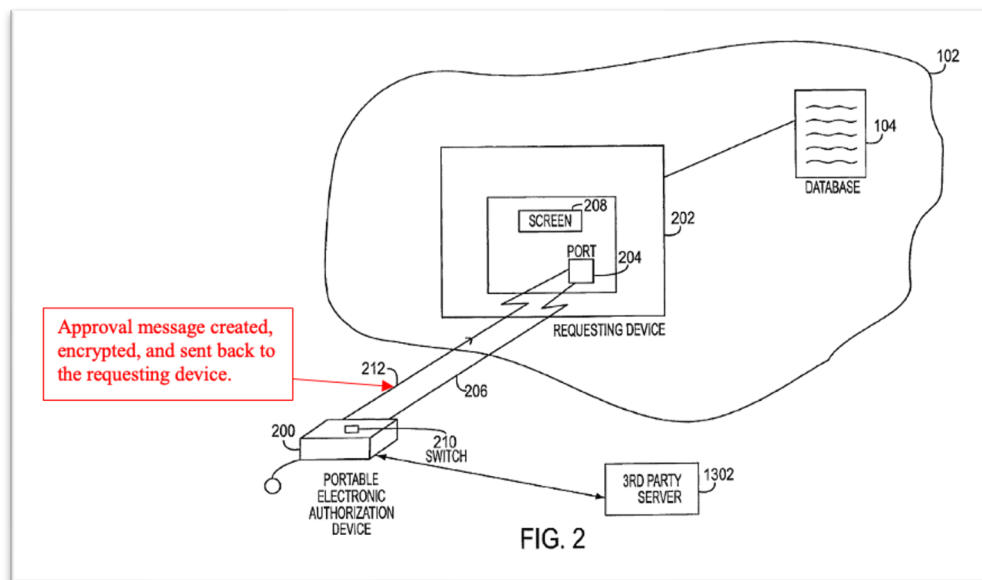
and a POSITA would have understood that WLANs imposed reduced costs relative to cellular data communications. *Id.*

A POSITA would also have had a reasonable expectation of success in implementing *Yong's* POS network and APs within *Wang's* POS Transaction system. *Dec.*, ¶ 63. Both *Wang* and *Yong* teach mobile devices with barcode readers that communicate wirelessly to look up pricing information. *Wang*, [0113]; *Yong*, at (57), 11. Both also teach that their respective devices are capable of communicating via a wireless network. *Wang*, [0113]; *Yong*, 11; *Dec.*, ¶ 63. Indeed, *Wang* itself expressly teaches that in one of its embodiments, a portable device may communicate with the establishment's server through a LAN. *Wang*, [0090]. Given the extensive technical and functional overlap, a POSITA would have expected success in implementing the proposed combination. *Dec.*, ¶ 63.

F. Claim 1(c): a financial/authorization institution for associating a PIN number with said mobile phone and for authorizing transactions initiated by said mobile phone,

Wang teaches a “third party server 1302” that associates a password or pass phrase with a PEAD-integrated mobile device and authorizes a transaction initiated by that mobile device upon receipt of the password or pass phrase. As set forth below, a POSITA would have understood that *Wang's* password satisfies the claimed “PIN number” or, in the alternative, that it would have been obvious to modify *Wang's* security system to utilize a PIN number.

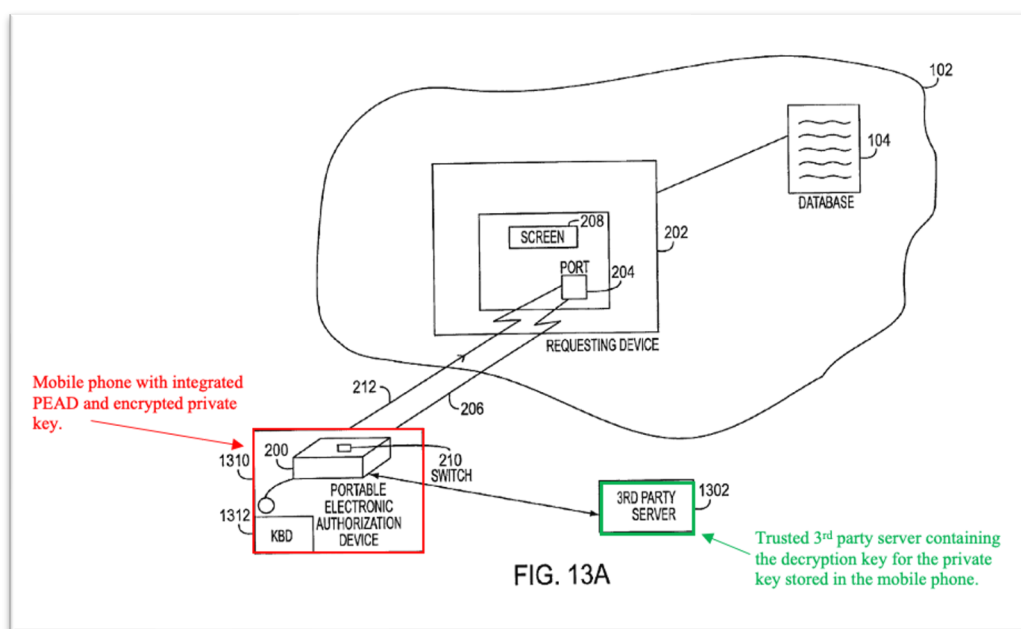
Wang teaches a transaction authorization process that occurs during the checkout process with a POS terminal (e.g., the transaction initiated by the mobile phone). Namely, “[o]nce the link between the PEAD and [POS] terminal is established, the PEAD can display the transaction information ..., and if the user agrees to pay, **he will press the approval button to authorize the transaction.**” *Wang*, [0113]. When the user presses the approval button, the PEAD generates a transaction approval message to be “encrypted and transmitted back to requesting device 202[.]” *Id.*, [0039]. Fig. 2 depicts this process:



Id., Fig. 2 (annotated). Because *Wang*’s server 1302 authorizes a financial transaction, it is a “financial/authorization institution” or is at least a component of a “financial/authorization institution[.]” as claimed. *Dec.*, ¶ 65.

While *Wang* teaches that the encryption may be performed by utilizing a private key kept within the PEAD 200 (*id.*, [0041]), *Wang* cautions that mobile

devices may not be equipped with sufficiently secure memory to store the private key. *Id.*, [0119], [0120] (noting that a “potential attacker” might access a private key in unsecured memory in a mobile device). *Wang’s* proposed solution encrypts the private key on the mobile device, and stores the decryption key **outside the device** in a third-party server (e.g., server 1302), as shown in Figure 13A:



Id., Fig. 13A (annotated), [0121]; *see also id.* at [0123] (describing a detailed method for implementing the security solution). “When the user attempts to make a signature . . . the software sends . . . the user’s password or pass phrase keyed in at the keyboard **1312** of the PDA, smart phone, or cell phone to a server **1302** belonging to the trusted 3rd party.” *Id.*, [0121]. Once the user keys in their password or phrase, “[t]he server checks **1352** the password or pass phrase and, if it is correct[,], sends the decryption key to the portable device, where it is used once and immediately discarded.” *Id.*

For a number of reasons, a POSITA would have understood that the password or pass phrase is associated, not only with the user, but also with the mobile device, as claimed. First, *Wang* teaches that the described password or pass phrase is used to retrieve a decryption key that the PEAD-equipped mobile device uses to decrypt a private key stored on the mobile device. *Id.* at [0121]. Discussing that private key, *Wang* teaches that “[i]n some cases, it may be desirable to encrypt [its] transaction request prior to transmission to the PEAD to further enhance security” and “is also desirable when, for example, the user identification data and the user’s private key are written into a blank PEAD for the first time to configure a PEAD that *is unique to a given user.*” *Id.*, [0052]. Similarly, *Wang* also teaches that “[i]f a greater level of security is desired, the user’s private key may be optionally [] scrambled or randomized prior to being written in to user’s private key block **304** by optional scrambler/descrambler logic **413**[.]” and that “[a]dvantageously, there is no other copy of the scrambled/randomized user’s private key *anywhere else beside[s] within the user’s private key block 304.*” *Id.* at [0059]; *see also id.* at [0060] (“In this manner, no version of the user’s private key, whether randomized or not, exists outside the PEAD itself.”). Thus, because *Wang*’s password is used to obtain the decryption key for the private key that is unique to the PEAD, a POSITA would have understood that *Wang*’s password or pass phrase is associated with the PEAD itself. *Dec.*, ¶ 68.

While *Wang* does not expressly refer to its “password or pass phrase” as a PIN number, a POSITA would have understood that *Wang*’s defined password satisfies the claimed “PIN number” or, in the alternative, at least renders obvious the claimed “PIN number.”⁷ Although *Wang* does not provide any specific examples of passwords or pass phrases, a POSITA would have understood that passwords, like PINs, could be any combination of letters, numbers or characters. *Dec.*, ¶ 67 (discussing the flexibility of passwords and PINs, and noting that *Dua* at [366] and

⁷ *Wang* does in fact expressly describe authenticating users via pin numbers, including as a means of authenticating an ATM user. *See, e.g., Wang*, [0005]–[0012]. This discussion, in the Background section, identifies certain security vulnerabilities associated with such authentication processes. *Id.* The portions of *Wang* relied upon by Petitioner describe a more sophisticated and secure process of authenticating a user. *Dec.*, ¶ 67. As set forth in detail in this section, a POSITA would have understood that *Wang*’s “password or pass phrase” satisfies the claimed PIN number. *Id.* This is true even though *Wang*’s “password or pass phrase” is described in the context of a more sophisticated authentication process than the basic ATM PIN process discussed in *Wang*’s Background section. *Id.* (explaining that both the standard ATM process and *Wang*’s more sophisticated process satisfy the claimed PIN).

[397] expressly teaches that “users [may] validate their identity during a transaction **by providing a PIN**” and that “PINs can be any length, and be **comprised of any combination of upper or lower case letters, numbers, and special characters**”). From this, a POSITA would have understood that *Wang*’s permissive use of the term “password” includes character strings that are composed entirely of numbers, satisfying even the narrowest interpretation of the claims “PIN number[.]” *Dec.*, ¶WDY14.

In the alternative, a POSITA would have found it obvious to have utilized a PIN number because it is simply a matter of design choice and one of a finite number of predictable solutions. *Wang* teaches that its password must be able to be “keyed in at the keyboard **1312** of the PDA, smart phone, or cell phone[.]” *Wang*, [0121]. Thus, a POSITA would have understood that a user’s password would have had to be comprised of some combination of the alphanumeric characters available on a mobile phone’s keyboard. *Dec.*, ¶¶ 66–67. Consistent with *Dua*’s PIN, a POSITA would have understood that *Wang*’s PIN could “be any length, and be comprised of any combination of upper or lower case letters, numbers, and special characters as provided for by the wireless device itself.” *Id.* at ¶ 67 (quoting *Dua*, [0366]). A POSITA would have been motivated to permit users to select passwords composed entirely of numbers, which is nothing more than a design choice selected from a finite number of options. *Id.*

G. Claim 1(d): 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.

As discussed above, *Wang* teaches that a PEAD-equipped mobile phone connects to an establishment's POS terminal via the wireless network and Internet in order to perform transactions. *Wang*, [0113]. In one described example, 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:

At the [POS] check-out counter, the [POS] terminal can scan in the merchandise barcodes and generate transaction information as well as generate a unique transaction number . . . ***or a unique ID of the [POS] terminal*** (e.g., a phone number) ***to give to the PEAD user to enter into the PEAD*** (for example the web phone). The user can use the keypad on the PEAD to enter the unique ID of the [POS] terminal or use an alternative input device built into the PEAD such as a barcode scanner or OCR reader to scan in the unique ID of the [POS] terminal. . . . Then the PEAD ***can use*** this unique transaction number ***or a unique ID of the [POS] terminal to establish the communication link*** with the [POS] system through the wireless network and Internet to conduct the transaction.

Id.

In the proposed combination (i.e., *Wang*'s PEAD-equipped mobile device supplemented with *Dua*'s wallet button), a user (1) engages the wallet button to enable wireless communication and (2) inputs the POS terminal's unique ID to establish a communication link with the POS system through the wireless network. *Dec.*, ¶ 69. A POSITA would have understood that establishing this communication

link furthers the transaction, permitting the user to complete a purchase via the PEAD-equipped mobile device and POS terminal. *Id.*

H. Claim 2: The apparatus of claim 1, wherein the mobile phone is configured to display information about goods scanned by said optical input on a display.

As explained for limitation 1(a)(ii), *Wang* teaches that “[o]nce 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.” *See* Claim 1(a)(ii); *see also Wang*, [0113] (teaching that the transaction information for an item is generated by “enter[ing] the merchandise bar code number to the PEAD through the keypad or scanner on the PEAD”). Thus, *Wang* discloses wherein its mobile phone is configured to display information about goods scanned by its optical input on the mobile phone’s display. *Id.*

I. Claim 3: The apparatus of claim 1, 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.

Wang teaches that during the checkout process (e.g., a commercial transaction) with a POS terminal, the PEAD will “**display the transaction information including the price, items, etc., [...]**” *Wang*, [0113]. Thus, *Wang* teaches displaying on the PEAD’s display information that includes the

identification of goods to be purchased (e.g., a display that includes identification of goods to be purchased) at least because *Wang* teaches the displaying of the transaction information that includes the items being purchased in the pending transaction. *Dec.*, ¶ 70.

Upon the PEAD displaying the transaction information to the user, the user then decides whether or not to proceed with the current commercial transaction by pressing an “approve button to authorize the transaction.” *Wang*, [0113].

As discussed above with respect to Claim 1(c), *Wang* in view of *Dua* then teaches that upon the user approving the transaction by pressing the approve button, the PEAD will then request the user enter a PIN number for authorizing the transaction and generating an encrypted transaction approval message to be sent to the requesting POS terminal. *See*, Claim 1(c). Specifically, *Dua* teaches a PIN Approval request that can be displayed to the user in Fig. 9:

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

Dua, Fig. 9, [0036] (teaching that Fig. 9 “is an example screen shot of a PIN Approval Request displayed [...].”). Specifically, *Dua*’s PIN Approval Request as displayed above includes the payment associated with the pending purchase (e.g., the amount of \$99.20).

A POSITA would have been motivated and found it obvious to similarly display the PIN Approval Request screen as taught by *Dua* (including information about the current transaction such as the payment (e.g., \$99.20) associated with the purchase) to the user of the PEAD upon the user pressing the approval button to authorize a transaction for the same reasons taught by *Dua*. *Dua* expressly teaches that by displaying the PIN verification/approval request screen “[t]he user is prompted on screen to enter his PIN in order to authorize the transaction described.”

Id., [0410]; *Dec.*, ¶¶ 70–71; *see also* motivation to combine expressed above with respect to Claim 1(c).

Wang expressly teaches that whenever the user needs to digitally sign a transaction the portable device (e.g., PEAD) will request the user to key in the password or pass phrase (e.g., PIN) for verification. *Wang*, [0123], [0121]. Thus, a POSITA would have had a reasonable expectation of success in modifying *Wang*'s PEAD to display *Dua*'s PIN Approval Request as *Wang* teaches there is a need to request the user to enter a password for verification, and *Dua* teaches a well-known technique for doing so by presenting a screen requesting that very information. *Dec.*, ¶¶ 70–72. Furthermore, displaying *Dua*'s PIN Approval Request that also included information pertaining to the current transaction would have provided the PEAD user with relevant information for that transaction thereby allowing the user to confirm the accuracy and validity of the transaction prior to entering their PIN for authorization (e.g., verify the merchant, date, and payment). *Id.*

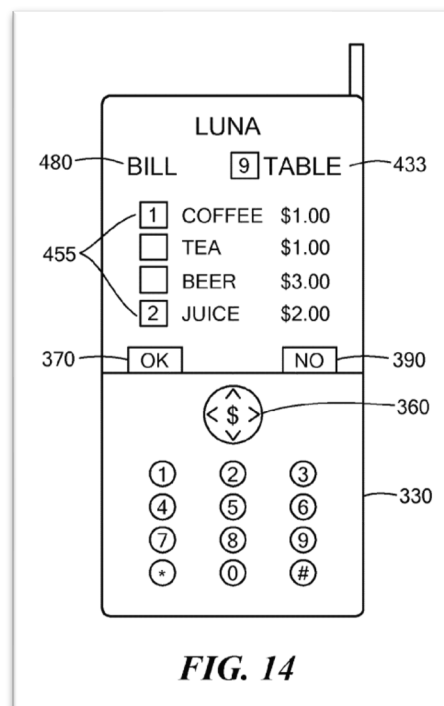
Modifying *Wang* to display *Dua*'s PIN Approval Request would have only amounted to the combination of known elements according to known methods to yield a predictable result, and such a modification would have only required simple programming techniques well within a POSITA's expertise. *Id.* Thus, *Wang* in view of *Dua* teaches a PEAD that was configured to provide a sequence of displays that included the displaying of transaction information (e.g., identification of goods)

along with a PIN Approval Request (e.g., payment associated with said purchase).

Id.

J. Claim 4: The apparatus of claim 1, wherein the mobile phone is configured to generate a listing of items available for purchase.

The '578 Patent depicts the mobile phone generating/displaying a listing of items for purchase in Fig. 14:



'578 Patent, Fig. 14, 8:28-32 (describing the same).

As discussed above with respect to Claim 1(a)(ii), *Wang* expressly teaches the PEAD will scan the merchandise barcodes of the items a user is purchasing and will “generate the transaction information[.]” *Wang*, [0113]. Furthermore, *Wang* expressly teaches the transaction information is displayed by the PEAD and at least includes the price and items being purchased. *Id.* Accordingly, similar to the '578

Patent, *Wang* teaches the PEAD-enabled mobile phone generating and displaying a list of items and their associated prices that a user is purchasing (e.g., a listing of items available for purchase).

K. Claim 5: The apparatus of claim 4, wherein the mobile phone is further configured to solicit a selection of a subset of items from said listing.

As explained with respect to Claim 4, *Wang* teaches that its PEAD-enabled mobile phone generates and displays a list of items and their associated prices that a user is purchasing (e.g., a listing of items available for purchase). *See supra* Claim 4. A POSITA would have further found it obvious and been motivated to modify *Wang*'s PEAD-enabled mobile phone to be configured to solicit a selection of a subset of items from *Wang*'s displayed list.

The '578 Patent teaches that "solicit[ing] a selection of a subset of items from said listing" includes, at least, removing an item from a retail bill. '578 *Patent*, at 7:48–53. As explained below, a POSITA would have been motivated and found it obvious to similarly configure *Wang*'s PEAD-enabled smartphone to allow a user to remove merchandise items from their transaction when the transaction information is displayed to the user.

Wang teaches that after its PEAD has established a connection with the POS terminal, the PEAD will display the user's transaction information, "and *if* the user agrees to pay, he will press the approve button to authorize the transaction." *Wang*,

[0113]. However, *Wang* does not expressly teach what happens if the user does *not* agree to pay if, for example, one or more of the items of merchandise the user selected was inadvertently included (e.g., the user accidentally grabbed a wrong item) or was more expensive than the user thought (e.g., the item was not on sale as user believed). At least to improve the user experience and efficiency of the PEAD-enabled smartphone, a POSITA would have found it obvious and been motivated to configure the PEAD-enabled smartphone to allow the user to remove those items they do not want to purchase when the transaction information is displayed to the user. *Dec.*, ¶ 73. Without that functionality, when the user realized they had selected an item inadvertently or that was more expensive than the user believed, the user would be required to abandon the entire transaction and begin again—forcing the user to rescan all the merchandise they have selected that they did intend to purchase. *Id.*

L. Claim 6: The apparatus of claim 1, wherein the mobile phone is configured to display information concerning an incomplete commercial transaction.

As discussed above with respect to Claim 1(c), *Wang* teaches that a PEAD-equipped mobile device sends a password or pass phrase to a 3rd party server (e.g., authorization institution), which authorizes the transaction if the password or pass phrase is correct. *See* Claim 1(c). However, if the password or pass phrase is incorrect, *Wang* teaches that the “server advises PEAD of failure[,]” which then

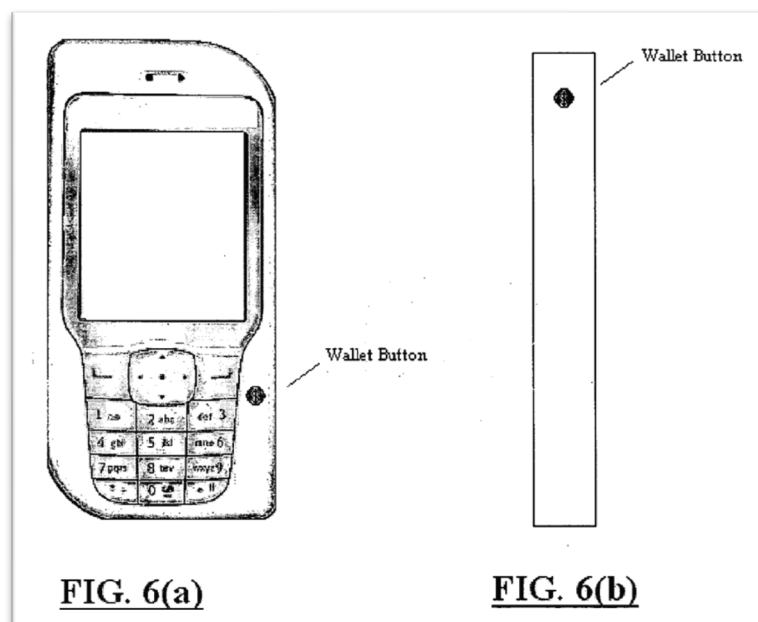
prompts the PEAD to “advise[] [the] user to re-enter password.” *Id.*, at Fig. 13B.

Thus, because *Wang* teaches its server notifies the user of the failure and then advises the user to re-enter their password, *Wang* expressly discloses displaying information concerning an incomplete transaction. *See also id.* at [0122] (describing the process for informing the PEAD of an incorrect password as depicted in Fig. 13B).

M. Claim 8: The apparatus of claim 1, wherein the dedicated actuator comprises a button labeled with a symbolic indication of a function thereof.

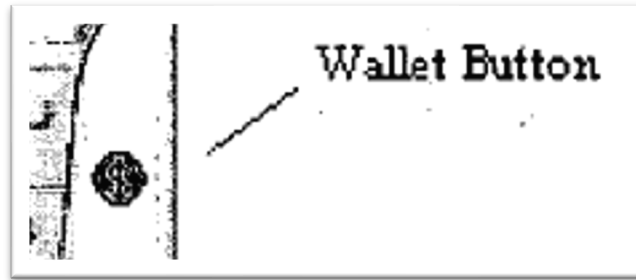
As discussed above with respect to Claim 1(a)(i), the combination of *Wang* and *Dua* teaches PEAD-equipped mobile phone having a dedicated actuator for initiating a commercial transaction. *See* Claim 1(a)(i).

The combination of *Wang* and *Dua* teaches that the PEAD-equipped mobile phone would have a wallet button like that as taught by *Dua* in Fig. 6(a) or 6(b):



Id., Figs. 6(a) and 6(b), [0387] (discussing the same).

As expressly shown in Figs 6(a) and 6(b), *Dua* teaches that the wallet button is labeled a “\$” symbol, indicating its function:



Id., Fig. 6(a) (excerpt showing close-up view of the wallet button labeled with a “\$”), [0396] (expressly teaching the “button or buttons may also have iconic or text representations either on them or next to them in order to signal their function.”). Thus, *Dua* expressly teaches the dedicated actuator comprises a button labeled with a symbolic indication of a function thereof as claimed.

N. Claim 9: The apparatus of claim 8, wherein the button comprises a touch-sensitive region on a display of the mobile phone.

As explained for Claim 1(a)(i), *Wang* in view of *Dua* teaches a mobile device including a dedicated wallet button for initiating a commercial transaction. *See* Claim 1(a)(i). Although *Dua*’s wallet button is 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.

By 2009, smartphones with touchscreen displays for inputting commands were well-known and commonplace. *Dec.*, ¶ 74. In fact, beyond smartphones, 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 was also known. *Skowronek* (Ex. 1010). Thus, a POSITA seeking to implement *Wang's* PEAD with *Dua's* dedicated wallet button in 2009 would have been motivated to do so in a smartphone with touchscreen displays for inputting commands. Such an implementation of the *Wang/Dua* PEAD in a touchscreen smartphone would have been a use of a known technique (applying touch-sensitive displays to smartphones) to improve a similar device (the *Wang/Dua* PEAD implemented in a mobile phone) in the same way (replacing *Dua's* physical wallet button with a touch-sensitive button on the display). *Dec.*, ¶ 74.

Second, replacing *Dua's* physical wallet button with a touch-sensitive button on the smartphone's display would have also been a simple substitution of known elements to obtain predictable results. *Id.* A POSITA would have had just two options for how to implement *Dua's* wallet button in the touchscreen smartphones available in 2009—a physical button or a touch-sensitive button on the display. *Id.*

Finally, a POSITA would have also been motivated to implement *Dua's* wallet button as a touch-sensitive button on the display to reduce the costs associated with manufacturing the *Wang/Dua* PEAD and to increase the PEAD's functionality

and use cases. First, by making the wallet button a touch-sensitive button on the display, the manufacturer of the PEAD would not be required to dedicate circuitry in the PEAD and space in the PEAD's housing to the wallet button. *Id.* Because the wallet button has a single function, a POSITA would have been motivated to implement it as a touch-sensitive button on the display and to limit the physical buttons on the housing to those that are multi-purpose and essential to the operation of the device. *Id.* Similarly, if a PEAD manufacturer were limited to physical buttons for any standalone functionality it desired to include in the PEAD, the number of functionalities the manufacturer could select would be limited by the physical space available for buttons on the PEAD's housing. *Id.* That number would be further limited by ensuring a quality user experience for the PEAD users—a PEAD housing filled with physical, distinct buttons would be burdensome, confusing, and uncomfortable to use. *Id.* By opting for touch-sensitive buttons on the display instead, a PEAD manufacturer would be able to include as many functionalities to the PEAD as they desired simply by including additional touch-sensitive buttons on the display. *Id.*

O. Claim 10: The apparatus of claim 1, where actuation of the dedicated actuator causes information identifying the commercial establishment to be displayed on the mobile phone.

As explained for Claim 1(a)(ii), a POSITA would have understood that both of *Wang's* PEADs for engaging in POS transactions were in communication with

the commercial establishment's server, at least in order to gain access to the commercial establishment's price lookup table and obtain an item's price once it has been scanned. *See* Claim 1(a)(ii). To gain access to the server, *Wang* teaches that the user must use the StoreID. *Wang*, [0115]. Further, *Wang* expressly teaches several ways for how the PEAD can connect to the commercial establishment's server. *Wang*, [0115]. Manually, *Wang* teaches that the user (1) "can enter the StoreID" when they go into the store; (2) can "use the barcode scanner of the cellular phone to scan in the StoreID posted in the store"; or (3) the StoreID can be broadcast in store premises via short-range communication. *Id.*

As explained for Claim 1(d), when a user of *Wang*'s PEAD modified to include *Dua*'s wallet button presses that button, the RFID functionality is activated, allowing the user to enter the POS terminal's unique ID and establish the connection between the two. *See* Claim 1(d). In the implementation of *Wang* that broadcasts the StoreID to the PEAD, a POSITA would have understood that by pressing the wallet button and activating the PEAD's RFID functionality, the PEAD would also receive the StoreID being broadcast throughout the store. *Dec.*, ¶ 75. Then, 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. *Id.* Further still, 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. *Id.*

P. Claim 11: The apparatus of claim 1, wherein actuation of the dedicated actuator causes display of a button to consummate a commercial transaction.

As explained for Claim 3, a POSITA would have been motivated and found it obvious to include *Dua's* PIN Approval Message screen in *Wang's* authorization process when using the PEAD. *See* Claim 3. Moreover, as explained for Claim 9, a POSITA seeking to implement *Wang's* PEAD with *Dua's* dedicated wallet button in 2009 would have been motivated to do so in a smartphone with touchscreen displays for inputting commands and would therefore have found it obvious to implement *Dua's* dedicated wallet button as a touch-sensitive region of *Wang's* mobile display. *See* Claim 9. Accordingly, a POSITA would have understood that when *Dua's* PIN Approval Message screen is implemented in *Wang's* PEAD on a touch screen smartphone, actuation of the touch-sensitive dedicated actuator on the touch screen would have caused the display of another touch-sensitive button to consummate a commercial transaction. *Dec.*, ¶ 76. More specifically, actuation of the touch-sensitive dedicated actuator would have caused the display of the *Dua's* PIN Approval Message screen in *Wang's* authorization process prompting the user to enter their PIN to authorize the transaction. *Id.* Because 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.*

Q. Claim 12: The apparatus of claim 1, wherein the mobile phone is configured to, on the basis of data provided by the optical input, display a price of the item.

See Claim 1(a)(ii) and Claim 4.

R. Claim 13: The apparatus of claim 1, wherein the mobile phone is configured to receive a coupon applicable to a future transaction with the commercial establishment.

Wang teaches that, among its PEAD's uses, its PEAD can be used to allow a variety of commercial establishments to send information or documents to the PEAD after completion of a transaction. For example, *Wang* teaches that a hotel could send a customer's "encrypted electronic room key through the Internet and wireless network to the PEAD" after acknowledging the transaction. *Wang*, [0104]. Similarly, an "airline can issue [an] encrypted electronic ticket through the Internet and wireless network to the PEAD" after a flight reservation is made, or a movie theater can do the same with a movie ticket once a customer buys a movie ticket. *Id.*, [0105]–[0106]. *Wang* also expressly teaches this same functionality can allow a Supermarket to "issue electronic coupons through the Internet and wireless network

to the PEAD. When the user shops in the Supermarket, he can present the coupons over the point of sale counter through the wireless network and Internet.” *Id.* [0107].

A POSITA would have been motivated and found it obvious to implement *Wang’s* coupon functionality in its PEAD for conducting POS transactions. *Dec.*, ¶ 77. First, 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 for POS transactions for scanning barcodes. *Wang*, Figs. 6A, 12A, [0113]. Thus, 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. *KSR Int’l Co. v. Teleflex Inc.*, 55 U.S. 398, 417 (2007) (“If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability”); *Dec.*, ¶ 77. Thus, it would not have “require[d] a leap of inventiveness” to implement *Wang’s* coupon functionality for use in a Supermarket in its PEAD for conducting POS transactions such as checking out at a supermarket. *See Boston Sci. Scimed, Inc. v. Cordis Corp.*, 554 F.3d 982, 991 (Fed. Cir. 2009) (“Combining two embodiments disclosed adjacent to each other in a prior art patent does not require a leap of inventiveness.”); *Paice LLC v. Ford Motor Co.*, 681 F. App’x 904, 917 (Fed. Cir. 2017) (same). Second, *Wang* expressly contemplates using its coupon functionality while shopping in a Supermarket, which is a well-known scenario for conducting POS transactions. *Dec.*, ¶ 77. Thus, adding

the coupon functionality to the PEAD for performing POS transactions would have been the simple application of a known technique to a known device to yield a predictable result and improvement. *Id.*

S. Claim 15(Pre): An apparatus for engaging in wireless commercial transactions, said apparatus comprising:

See supra Claim 1(c).

T. Claim 15(a): a mobile phone equipped with

See supra Claim 1(a)

U. Claim 15(a)(i): a dedicated actuator for initiating a commercial transaction, and

See supra Claim 1(a)(i).

V. Claim 15(a)(ii): an optical input for receiving information concerning prices of goods;

See supra Claim 1(a)(ii).

W. Claim 15(b): a network hub for wireless exchange of information between a commercial establishment and said mobile phone within the boundaries of the establishment; and

See supra Claim 1(b).

X. Claim 15(c): and a financial/authorization institution for associating a PIN number with said mobile phone and for authorizing transactions initiated by said mobile phone,

See supra Claim 1(c).

Y. Claim 15(d): wherein actuation of the dedicated actuator causes display of a button to consummate a commercial transaction.

See supra Claim 11.

- Z. Claim 16:** The apparatus of claim 15, wherein said mobile phone is configured to display information about goods scanned by said optical input on a display.

See supra Claim 2.

- AA. Claim 17:** The apparatus of claim 15, 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.

See supra Claim 3.

- BB. Claim 18:** The apparatus of claim 15, wherein the mobile phone is configured to generate a listing of items available for purchase.

See supra Claim 4.

- CC. Claim 19:** The apparatus of claim 10, wherein the mobile phone is further configured to solicit a selection of a subset of items from said listing.

See supra Claim 5.

- DD. Claim 20:** The apparatus of claim 15, wherein the mobile phone is configured to display information concerning an incomplete commercial transaction.

See supra Claim 6.

- EE. Claim 22:** The apparatus of claim 15, wherein the dedicated actuator comprises a button labeled with a symbolic indication of a function thereof.

See supra Claim 8.

- FF. Claim 23:** The apparatus of claim 22, wherein the button comprises a touch-sensitive region on a display of the mobile phone.

See supra Claim 9.

GG. Claim 24: The apparatus of claim 15, wherein actuation of the dedicated actuator causes information identifying the commercial establishment to be displayed on the mobile phone.

See supra Claim 10.

HH. Claim 25: The apparatus of claim 15, wherein a terminal associated with a point of sale at the commercial establishment generates a code to be entered into a phone to further the transaction.

See supra Claim 1.

II. Claim 26: The apparatus of claim 15, wherein the mobile phone is configured to, on the basis of data provided by the optical input, display a price of the item.

See supra Claim 12.

JJ. Claim 27: The apparatus of claim 15, wherein the mobile phone is configured to receive a coupon applicable to a future transaction with the commercial establishment.

See supra Claim 13.

VI. THE BOARD’S DISCRETION UNDER 35 U.S.C. § 314(a)

Under the “*Fintiv* factors,” the Board may consider parallel litigation, including an early trial date, in determining whether to institute under 35 U.S.C. § 314(a). *NHK Spring Co., Ltd., v. Intri-Plex Technologies, Inc.*, IPR2018-00752, Paper 8, at 19–20 (PTAB Sept. 12, 2018) (precedential); *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11, at 2–3, 6 (PTAB Mar. 20, 2020) (precedential). Those factors favor institution here.

A. Stay, Proximity to Trial, and Investment in Parallel Proceeding

Parallel litigation was initiated by Poniatowski in May of 2023. However, the case has yet to issue a schedule because Apple filed a motion to dismiss for improper service. Ex. 1011. On March 28, 2024, the district court granted Apple’s motion. *Id.* As of the filing of this Petition, Poniatowski had not yet refiled his complaint against Apple. These factors favor institution.

B. Overlap

Given the dismissal of the parallel litigation, the claims, grounds, arguments, and evidence presented in this Petition have not been presented in the parallel proceeding. Accordingly, this factor favors institution.

C. Same Party

The Parties are the same. Accordingly, the *Fintiv* factors “say[] nothing about” this situation. *Cisco Sys., Inc. v. Ramot at Tel Aviv Univ. Ltd.*, IPR2020-00122, Paper 15 at 10–11 (PTAB May 15, 2020) (APJ Crumbley, dissenting) (stating that disfavoring a “defendant in the district court” is “contrary to the goal of providing district court litigants an alternative venue to resolve questions of patentability”).

D. Other Circumstances

“[W]here the PTAB determines that the information presented at the institution stage presents a compelling unpatentability challenge, **that determination alone** demonstrates that the PTAB should not discretionarily deny institution under *Fintiv*.” *Hewlett Packard Enterprise Co., et al. v. Billjco LLC*,

IPR2022-00420, Paper 17 at 6 (PTAB July 12, 2022) (“[c]ompelling, meritorious challenges are those in which the evidence, if unrebutted in trial, would plainly lead to a conclusion that one or more claims are unpatentable by a preponderance of the evidence”). The strength of Petitioner’s Proposed Grounds weighs strongly in favor of institution. *Id.* (refusing to deny institution under *Fintiv* based solely on the strength of Petitioner’s grounds).

VII. CONCLUSION

For the foregoing reasons, Petitioner respectfully requests *inter partes* review of the Challenged Claims of the ’578 Patent.

Respectfully submitted,

BY: /s/ Paul R Hart

COUNSEL FOR PETITIONER

VIII. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(a)(1)

A. Real Party-In-Interest

Apple Inc. is the real party-in-interest. 37 C.F.R. § 42.8(b)(1).

B. Related Matters

Pursuant to 37 C.F.R. § 42.8(b)(2), Apple identifies the following matter related to the '578 Patent:

- *Poniatowski v. Apple Inc.*, Case No. 6:23-cv-00316 (W.D. Tex.), since dismissed without prejudice for improper service.

C. Lead and Back-Up Counsel

Petitioner provides the following designation and service information for lead and back-up counsel. 37 C.F.R. § 42.8(b)(3) and (b)(4).

Lead Counsel	Back-Up Counsel
Paul R. Hart (Reg. No. 59,646) paul.hart@eriseip.com	Adam P. Seitz (Reg. No. 52,206) adam.seitz@eriseip.com PTAB@eriseip.com
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APPENDIX OF EXHIBITS

Exhibit 1001	U.S. Patent No. 8,270,578 to Poniatoski (“’578 <i>Patent</i> ”)
Exhibit 1002	File History of U.S. Patent No. 8,270,578 (“’578 <i>File History</i> ”)
Exhibit 1003	Declaration of Dr. Benjamin B. Bederson (“ <i>Dec.</i> ”)
Exhibit 1004	U.S. Patent Publication No. 2002/0023215 to Wang et al. (“ <i>Wang</i> ”).
Exhibit 1005	U.S. Patent Publication No. 2006/0165060 to Dua (“ <i>Dua</i> ”)
Exhibit 1006	Korean Patent Publication No. 20070063899 to Se Yong Noh et al. (“ <i>Yong</i> ”)
Exhibit 1007	File History of U.S. Patent Application No. 12/087,539 (“’539 <i>Application</i> ”)
Exhibit 1008	File History of U.S. Patent Application No. 10/407,222 (“’222 <i>Application</i> ”)
Exhibit 1009	File History of U.S. Patent Application No. 13/559,194 (“’194 <i>Application File History</i> ”)
Exhibit 1010	U.S. Patent Publication No. 2010/0023449 to Skowronek et al.
Exhibit 1011	Poniatoski v. Apple Inc., No. 6:23-cv-00316 (W.D. Tex.), Docket Sheet
Exhibit 1012	U.S. Patent No. 5,923,735 to Swartz et al.
Exhibit 1013	U.S. Patent No. 6,577,861 to Ogasawara
Exhibit 1014	International Publication No WO 03/060796 to Singhal
Exhibit 1015	U.S. Patent No. 8,219,490 to Hammad et al.
Exhibit 1016	U.S. Patent No. 7,520,430 to Stewart et al.
Exhibit 1017	U.S. Patent Publication No. 2009/0037269 to Bassemir et al.
Exhibit 1018	U.S. Patent Publication No. 2008/0119165 to Mittal et al.
Exhibit 1019	U.S. Patent No. 8,908,973 to Goldsmith et al.
Exhibit 1020	U.S. Patent No. 7,903,093 to Kim et al.
Exhibit 1021	U.S. Patent No. 7,018,286 to Aggarwal et al.
Exhibit 1022	U.S. Patent Publication No. 2004/0262386 to Abrams et al.

CERTIFICATION OF WORD COUNT

The undersigned certifies pursuant to 37 C.F.R. § 42.24 that the foregoing Petition for *Inter Partes* Review, excluding any table of contents, mandatory notices under 37 C.F.R. § 42.8, certificates of service or word count, or appendix of exhibits, contains 13,240 words according to the word-processing program used to prepare this document (Microsoft Word).

Dated: April 5, 2024

BY: /s/ Paul R Hart
Reg. No. 59,646

COUNSEL FOR PETITIONER

CERTIFICATE OF SERVICE ON PATENT OWNER
UNDER 37 C.F.R. § 42.105

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105, the undersigned certifies that on April 5, 2024, a complete and entire copy of this Petition for *Inter Partes* Review including exhibits was provided via Federal Express to the Patent Owner by serving the correspondence address of record for the '578 Patent as listed on Patent Center:

Paul Poniatowski
11 Keniga , m 12
Warsaw, - 02-495
POLAND

Further, a courtesy copy of this Petition for *Inter Partes* Review was sent via email to the email address Patent Owner used to communicate in the now-dismissed litigation:

paulponiatowski@hotmail.com

BY: /s/ Paul R Hart
Reg. No. 59,646

COUNSEL FOR PETITIONER