

IPR2024-01221
US Pat. 7,314,167

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

EARLY WARNING SERVICES, LLC
Petitioner

v.

INTELLECTUAL VENTURES II LLC
Patent Owner

Patent No. 7,314,167
Issue Date: January 1, 2008
Title: METHOD AND APPARATUS FOR PROVIDING SECURE
IDENTIFICATION, VERIFICATION AND AUTHORIZATION

IPR2024-01221

PETITION FOR INTER PARTES REVIEW
UNDER 35 U.S.C. §§ 311-319 *ET. SEQ.*

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EXHIBITS

Exhibit	Description
1001	U.S. Pat. No. 7,314,167 B1
1002	Declaration of Thomas Purves
1003	Prosecution History of the '167 Patent
1004	Wang (US Pub. No. 2002/0023215 A1)
1005	Take an Order (TAO)
1006	Palm Treo Manual (PTM)
1007	Oxford Dictionary: “predetermined”
1008	Drummond (US Pub. No. 2003/0217005 A1)
1009	Raines (US Pub. No. 2004/0193538 A1)
1010	Internet Archive Declaration (July 16, 2024)
1011	Palm Sales Article
1012	Comparison of Wang Ex. 1004 to US Pat. No. 5,917,913
1013	Stevens Creek Software Awards website
1014	Visa 3-D Secure System Overview
1015	Predko, <i>Programming and Customizing the 8051 Microcontroller</i> (1999).
1016	Reserved
1017	Schneier (1996), “Applied Cryptography”
1018	2005 Wikipedia entry: “Digital Signature”

1019	Patterson, “Computer Organization and Design: The Hardware/Software Interface” (1993)
1020	ISO 8583-1:2003
1021	Oracle Mobile Application Foundation (2003)
1022	Ban (US Pat. No. 5,404,485)
1023	Hennessy, <i>Computer Architecture: A Quantitative Approach</i> (2003)
1024	2005 Wikipedia entry: “Credit Card”
1025	Pogue, “The Awkward Smart Phone Grows Up,” <i>New York Times</i> (June 30, 2005)
1026	JP4396018B2 (Denso) (with translation)
1027	US Pat. No. 5,917,913 (Wang II)
1028	“Seiko Instruments...” Business Wire Article (2000)
1029	“SiPix’s Pocket Printer...” PR Newswire (2001)
1030	2005 Wikipedia entry: “Short Message Service (SMS)”
1031	NIST Security Requirements for Cryptographic Modules (2001)
1032	Postel, J., Simple Mail Transfer Protocol (1981)
1033	Nisan, “Elements of Computing Systems” (2005)
1034	Internet Archive Declaration (July 26, 2024)
1035	Marriott, “Keeping Track of Business Cards...,” <i>New York Times</i> (Dec. 9, 2004).

I. Introduction

Early Warning Services, LLC (“Petitioner”) petitions for *inter partes* review (“IPR”) of Claims 1, 2, 4, 5, 7, 8, 12, 13, 17, 19-21, 23, 24, 26, 27, 29, 30, 34, 39-41, and 43 (“Challenged Claims”) of U.S. Patent No. 7,314,167 (Ex. 1001, the “’167 patent”), assigned on its face to Pisafe, Inc. and subsequently assigned to Intellectual Ventures II LLC (“Patent Owner”). The Challenged Claims are unpatentable over the prior art for the reasons that follow.

The Challenged Claims are directed to an apparatus and a method for providing a secure transaction. Each apparatus claim recites well-known features, such as: 1) a device configured to capture an image having information embedded therein (e.g., a bar code), 2) a memory, 3) an input unit, 4) a processor, and 5) an output unit. The method claims recite similar features. The ’167 patent describes common components and methods well-known in the art, and the prior art anticipates or renders obvious each of the Challenged Claims. Ex. 1002 at 36. The Board should institute this IPR and cancel all Challenged Claims.

II. Statutory Requirements for Inter Partes Review

A. Real Party-in-Interest

Early Warning Services, LLC is the only real party-in-interest.

B. Related Matters

Petitioner is aware of the following lawsuits involving the '167 Patent:

- *Assurant, Inc. v. Intellectual Ventures II LLC et al.*, No. 24-cv-344 (D. Del.) (pending).
- *Intellectual Ventures II LLC et al. v. JPMorgan Chase & Co.*, No. 2:23-vc-00523 (E.D. Texas) (dismissed May 17, 2024).

Defendant JPMorgan Chase & Co. is a customer of Petitioner but had no role in the preparation of this petition. For conflicts purposes, the following entities have minority interests in Early Warning Services, LLC: Bank of America, JPMorgan Chase Bank, PNC Bank, Wells Fargo Bank, Truist (formerly BB&T), Capital One, and U.S. Bank. None of these entities is a real party-in-interest.

C. Designation of Lead and Backup Counsel

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D. Service Information

Please address correspondence to lead counsel at the address shown above.

Petitioner also consents to electronic service by email at:

IPR2024-01221@ktslaw.com

E. Power of Attorney

A Power of Attorney for Petitioner with designation of counsel is filed herewith in accordance with 37 C.F.R. § 42.10(b).

F. Standing

Petitioner certifies that the '167 patent is available for IPR as a pre-AIA patent.

III. Statement of Precise Relief Requested

Petitioner requests cancellation of Claims 1, 2, 4, 5, 7, 8, 12, 13, 17, 19-21, 23, 26, 27, 29, 30, 34, 39-41, and 43 ("Challenged Claims") of the '167 patent.

Petitioner's full statement of the reasons for relief is set forth in detail in Section X

and is supported by the Declaration of Thomas Purves (Ex. 1002), an expert in mobile authentication and transaction technology, including secure transaction technology. Ex. 1002 at 20.

IV. Threshold Requirement for Review

An IPR petition must demonstrate “a reasonable likelihood that the petitioner would prevail with respect to at least one of the claims challenged in the petition.” 35 U.S.C. § 314(a). This Petition exceeds that threshold. Ex. 1002 at 31.

V. Background of the Technology

The '167 patent is directed to an apparatus for providing a secure transaction. The apparatus includes an image capture device configured to capture an image, the image having information embedded therein. The apparatus also comprises a memory configured to store predetermined information, an input unit configured to receive input information provided by a user, a processor, and an output unit. The processor is configured to verify the user based on the input information to ensure that the user is authorized to use the apparatus, and generate an output based on the information embedded in the image and the predetermined information. The output unit is configured to forward the output generated by the processor. Ex. 1001 at Abstract. Each component of this apparatus, as well as the

combination and use of these components, was known in the art before the priority date of the '167 patent. Ex. 1002 at 32.

Challenged claim 1 is illustrative of the apparatus claimed in the patent and is comprised exclusively of conventional components. *Id.* at 33.

1. An apparatus for providing a secure transaction, the apparatus comprising:

- an image capture device configured to capture an image, the image having information embedded therein including information relating to a transaction;

- a memory configured to store predetermined information;

- an input unit configured to receive input information provided by a user; a processor configured to:

- verify the user based on the input information to ensure that the user is authorized to use the apparatus; and

- generate an output based on the information embedded in the image and the predetermined information; and

- an output unit configured to forward the output generated by the processor,

- wherein the output includes a digital signature to be used to signify authorization by the user with respect to the transaction.

VI. Overview of the '167 Patent

The '167 patent is entitled “Methods and Apparatus for Providing Secure Identification, Verification and Authorization.” The '167 patent issued on January 1, 2008 from Application No. 11/075,493 (“the '493 application”), which was filed on March 8, 2005. The '167 patent is thus subject to pre-AIA § 102 and § 103 and is eligible for IPR.

A. Prosecution History of the '167 Patent

For purposes of this Petition, the examination of the '167 patent was short and unremarkable.¹ U.S. Patent Application No. 11/075,493 was filed on March 8, 2005. After a cursory examination, some of the claims were indicated as allowable if rewritten in independent form. Ex. 1003 at 75-76. The applicant responded by amending the claims, which were subsequently allowed. Ex. 1003 at 42-43, 52-60. The '167 patent issued on January 1, 2008.

B. Claim Construction

Claims are construed in IPRs under the *Phillips* standard in which claim terms are given their ordinary and customary meaning as understood by a POSA in view of the patent specification and prosecution history. *See* 37 C.F.R. § 42.100(b);

¹ Relevant excerpts of the prosecution history are included as Ex. 1003.

Phillips v. AWH Corp., 415 F.3d 1303, 1315-17 (2016) (en banc). An applicant's statements characterizing its invention during prosecution may give rise to a disclaimer. *See Tech. Prop. Ltd. LLC v. Huawei Techs. Co., Ltd.*, 849 F.3d 1349, 1357-58 (Fed. Cir. 2017).

Petitioner proposes constructions for certain terms in the claims of the '167 patent below. Terms not discussed below should be construed to have their ordinary and customary meanings.

1. "Forward"

Independent claims 1 and 19 recite "an **output unit** configured to **forward** the output generated by the processor." Independent claims 23, 39, and 43 recite "**forward** the generated output to the user." A claim construction issue exists as to what constitutes "forwarding" an output. The specification does not define "forward" but provides several examples using the term "forward." In some instances, the term "forward" is used in referring to sending the output to another device, e.g., to a secure device or server. Ex. 1001 at 8:45-51,² 10:24-33, 12:48-58, 14:23-30, and 14:57-62. In claim 5, the '167 patent claims that the output unit, which forwards the output, "is a display." Thus, claim 5 expressly indicates that

² The notation X:Y-Z refers to column X, lines Y-Z.

the presenting of an output on a display screen constitutes “forwarding,” at least as that term is used in the ’167 patent. Ex. 1002 at 57. Thus, consistent with the intrinsic evidence, the term “forward” should be construed as either sending the output to another device or displaying an output on a display.

2. “Image capture device”

Independent claims 1 and 19 recite “an image capture device configured to capture an image....” A claim construction issue exists as to the meaning of the term “image capture device.” Although the specification does not define this term, it indicates that the image capture device or circuit 120 may include a digital camera or other type of image capturing device that is used to capture an image and/or video information. Ex. 1001 at 5:8-11, 5:21-29. The patent also indicates that the image may be a barcode. *Id.* The term “image capture device” should therefore be construed as any device that can capture an image, such as a barcode scanner. Ex. 1002 at 58.

3. “Predetermined Information”

Independent claims 1 and 19 recite “a memory configured to store **predetermined information.**” *Id.* Independent claims 23, 39, and 43 recite “store **predetermined information....**” *Id.* A claim construction issue exists as to the meaning of “predetermined information.” Although the specification does not

define “predetermined information,” it does disclose that predetermined information is stored in memory and may include, for example, address information, personal profile information, and payment account information. *Id.* at 6:17-22. The specification further discloses that the predetermined information may be used to generate an authentication code (e.g., an output). *Id.* at 6:55-66. This usage of the term “predetermined” is consistent with its dictionary definition, which is “established or decided in advance.” Ex. 1007. Based on its usage in the specification and definition, the term “predetermined information” should be construed as any information that is established and stored in memory in advance of generating the output. Ex. 1002 at 59.

VII. Level of Ordinary Skill in the Art

A person of ordinary skill in the art (POSA) is a hypothetical person presumed to be aware of all pertinent art, to think along with the conventional wisdom in the art, and to have ordinary creativity. *King Pharm., Inc. v. Eon Labs, Inc.*, 616 F.3d 1267, 1281 (Fed. Cir. 2010).

For the ’167 patent, a POSA is a person with a relatively high level of skill, such as having at least a bachelor’s degree in the field of computer science and/or electrical engineering, together with 2-3 years in the financial technology sector. The POSA would have knowledge of the commercial and scientific literature

pertaining to securing transactions, before the priority date. A POSA would also have knowledge of processing devices. Ex. 1002 at 19.

VIII. Applicable Law

A. Anticipation

A claim is anticipated “if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.”

Verdegaal Bros, Inc. v. Union Oil Co., 814 F.2d 628, 631 (Fed. Cir. 1987).

A prior art reference that fails to expressly set forth a particular element of a claim still anticipates the claim if that element is “inherent” in the disclosure. *See Schering Corp. v. Geneva Pharms.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003) (claim limitation is disclosed if limitation is necessarily present, or “inherent,” in reference). This principle applies even if the inherent feature would not have been recognized by a POSA. *Schering Corp.* at 1377-78. Thus, a limitation claiming the “natural result” flowing from the prior art’s limitations is considered disclosed in the prior art. *King Pharm., Inc. v. Eon Labs, Inc.*, 616 F.3d 1267, 1275-76 (Fed. Cir. 2010); *see also SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1343-44 (Fed. Cir. 2005).

B. Obviousness

The obviousness inquiry under pre-AIA § 103 is set forth in *Graham v. John Deere Co. of Kansas City*: “[T]he scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved.” 387 U.S. 1, 17 (1996). Against this backdrop, the obviousness or non-obviousness of the subject matter is determined. *Id.* at 17-18. The party challenging the patent must also show that one of ordinary skill in the art would have a reason to combine the elements as recited in the claims. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418-19 (2007). A claim is unpatentable if the differences between the claimed subject matter and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. *See* 35 U.S.C. § 103; *KSR*, 550 U.S. at 405; *Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1328-29 (Fed. Cir. 2009). Furthermore, “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

The obviousness analysis does not require express teachings but may be based on the common sense, inferences, and creative steps expected of a person of

ordinary skill in the art. *Id.* The expansive and flexible approach in *KSR*, in fact, is consistent with long-standing Federal Circuit practice that “not only permits, but requires, consideration of common knowledge and common sense.” *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed. Cir. 2006) (citations omitted). Additionally,

[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.

KSR, 550 U.S. at 402-03. In sum, “a court must ask whether the improvement is more than the predictable use of prior art elements according to their established function.” *Id.* at 417.

C. Printed Publication Prior Art

A patent claim is anticipated if it was described in a printed publication before the priority date of the patent. Public accessibility is the “touchstone” of whether a reference constitutes a printed publication. *In re Hall*, 781 F.2d 897, 899 (Fed. Cir. 1986). Whether a reference is publicly accessible and thus qualifies as a printed publication requires a case-by-case inquiry into the facts surrounding the

reference's disclosure to members of the public. *See Medtronic*, 891 F.3d at 1380 (citing *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004)); *see also Samsung Elecs. Co., Ltd. v. Ibex PT Holdings Co., Ltd.*, IPR2018-00092, Paper 31 (PTAB May 7, 2019). This factual inquiry broadly considers whether the reference was disseminated or otherwise made available such that the POSA, exercising reasonable diligence, would have been able to find the reference. *See Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 772 (Fed. Cir. 2018). An important factor in determining whether a document is a printed publication is the perceived *purpose* of the document. *See Weber, Inc. v. Provisur Techs., Inc.* 92 F.4th 1059 (Fed. Cir. 2024) (“Where, as here, ‘a publication’s purpose is a “dialogue with the intended audience,” that purpose indicates public accessibility.”).

Establishing a specific date of public accessibility of a printed publication, although helpful, is not necessary for a document to qualify as a printed publication. *See, e.g., Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1568–69 (evidence was sufficient to approximate accessibility date); *Hall*, 781 F.2d at 899 (citing “general library procedure as to indexing, cataloging, and shelving of theses” as sufficient to approximate accessibility date).

IX. Overview of the Prior Art

A. Wang et al. (Ex. 1004)

U.S. Patent Publication No. 2002/0023215 to Wang et al. (“Wang”) was published on February 21, 2002, more than a year before the priority date of the ’167 patent and is thus prior art under pre-AIA 35 U.S.C. § 102(b). Wang is directed to systems and methods of conducting secure transactions and is therefore in the same field of endeavor as the ’167 patent. Ex. 1002 at 37-38. Wang was not disclosed or considered during the prosecution of the application that issued as the ’167 patent. Ex. 1001 at 1.

Wang discloses a portable apparatus (a “PEAD”) that is usable to perform secure transactions. Ex. 1004 at [0002]. The PEAD includes a barcode scanner or optical character recognition (OCR) reader that reads information from a barcode to select an item for a transaction. *Id.* at [0115]. The PEAD also includes a memory that stores various data (e.g., predetermined information), such as user identification data and a user’s private key. *Id.* at [0044], [0115]. The apparatus generates transaction approval data and digitally signed receipts (e.g., outputs) based on the information from the barcode and the stored predetermined information. *Id.* at [0051], [0055], [0085], [0115]. The apparatus then forwards the transaction approval data and digitally signed receipts. *Id.*

B. Take an Order (Ex. 1005)

Take an Order (“TAO”) is a prior art printed publication. TAO is directed to systems and methods of conducting financial transactions and is therefore in the same field of endeavor as the ’167 patent. Ex. 1002 at 39-40.

TAO is a prior art printed publication in the form of a product advertisement for software from Stevens Creek Software that runs on Palm computing devices and was generally known and available to the relevant technical community more than six months before the earliest possible priority date of the ’167 patent. *See* Internet Archive Declaration, Ex. 1034 at 1-7.³

A reference is publicly available (and therefore, constitutes a prior art publication) if it is “disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence can locate it.” *Medtronic, Inc. v. Barry*, 891 F.3d 1368, 1380

³ Ex. 1034 is an Internet Archive declaration relating to an Aug. 25, 2004 capture of the TAO website. Ex. 1005 contains the same TAO capture and is a true and accurate copy of the TAO web page as captured by the Internet Archive on that date. Ex. 1034 at 1-7.

(Fed. Cir. 2018). A POSA would have easily been able to access TAO using reasonable diligence to locate it. Ex. 1002 at 39-42.

A POSA would have known that Stevens Creek Software was a “leading provider” of software solutions for the Palm Computing Platform and would have known that the Stevens Creek website provides information concerning their software solutions. Ex. 1002 at 43; Ex. 1028 at 2 (indicating “Stevens Creek Software is one of the premier software developers for the Palm Computing platform” and directing users to their website); Ex. 1029 at 1-2 (touting the TAO app, stating “Stevens Creek Software...is one of the leading developers of software for Palm,” and directing those interested in such software to www.stevenscreek.com). Thus, a POSA searching for software solutions that run on mobile devices, such as the Palm computing device, would have known to access the Stevens Creek website to learn about their software products. Ex. 1002 at 43. Also, since the website was indexed and searchable, a POSA conducting a simple internet search using terms such as “Palm Treo,” “taking orders,” and “point of sale software” would be expected to return the Take and Order! website at the top of their internet search results. *Id.* at 44. (indicating Stevens Creek webpage was a top three search result using these terms); *see also HVLPO2 v. Oxygen Frog*, 2018 WL 11413543 at n.4 (N.D. Fla. May 2018) (indicating “it is

not unreasonable to assume that a present-day search is somewhat reflective of what a search would have produced in the past....”). Once at the website, a POSA would be easily able to access TAO from the Stevens Creek Software home page with only one mouse click: Home Page→Take An Order! Ex. 1034 at 8-10 (Home Page) → Ex. 1034 at 4-7 (Take An Order!).

Additionally, TAO is a website advertisement that, by its very nature, is a public-facing document, further supporting that it is a printed publication. Ex. 1002 at 45; see *Keysight Techs. Inc. v. Centripetal Networks*, IPR2022-01525 (27) (PTAB 2024) (finding document’s purpose of “dialogue with the intended audience” was relevant and noting that “purpose indicates public accessibility.”). The totality of the evidence supports that TAO was publicly accessible to those skilled in the art and constitutes a printed publication at least as of August 2004. Ex. 1002 at 45. TAO was not disclosed or considered during prosecution of the application that issued as the ’167 patent. Ex. 1001 at 1.

TAO discloses software that is executable on a Palm Treo device. Ex. 1005 at 1-3. The software is directed, for example, to users at trade shows or expos, e.g., merchants, to allow them to place orders for customers, deliver products, and issue receipts. *Id.* at 1. The software enables the Palm Treo device to scan a barcode of an item to add an item to an order (e.g., an output). *Id.* at 1-3. For existing

customers having a standard discount (e.g., predetermined information), the order is automatically updated to reflect the discount. *Id.* at 1-2. Thus, the orders are generated based on both (i) barcode image information and (ii) predetermined discount information. TAO discloses that the order is forwarded to the user's desktop computer. *Id.* at 3; Ex. 1002 at 46.

C. Palm Treo Manual (Ex. 1006)

Palm Treo Manual ("PTM") is a user manual for the Palm Treo 600 device and was published as early as June 2004, i.e., before the priority date of the '167 patent. The PTM is prior art under pre-AIA 35 U.S.C. § 102(a). The PTM bears all the hallmarks of a printed publication, including the indicia: "Copyright (c) 2004 palmOne, Inc. All rights reserved." Ex. 1006 at 2. As a publicly traded company with sales in the millions of devices (Ex. 1011), Palm would have been considered a reputable publisher for its product literature. Ex. 1002 at 47-48; *see Hulu, LLC v. Sound View Innovations, LLC*, Case IPR2018-01039, Paper 29 (P.T.A.B. Dec. 20, 2019) (precedential) (holding indicia of publication and reputation of publisher was sufficient for reference to be deemed a printed publication). PTM is a prior art printed publication that was generally available, known, and accessible to the relevant technical community before the earliest possible priority date of the '167

patent. Ex. 1010 at 2 (confirming that PTM was available on the Palm webpage as indexed by the Internet Archive on June 12, 2004).

A POSA would have known that Palm was a leading provider of mobile devices such as the Palm Treo 600 and would have been able to easily access the PTM at least by conducting an internet search or accessing the Palm website. Ex. 1002 at 49. For example, since the Palm website was indexed and searchable, a POSA conducting a simple internet search using terms such as “Palm Treo 600” and “user manual” would be expected to return the PTM at the top of their search results. *Id.* at 50. Moreover, a POSA would expect that they could access user manuals such as PTM on the Palm website as was the common practice in the industry. *Id.* Specifically, a POSA would be easily able to access the PTM from the PalmOne home page (<http://www.palmone.com/us>) with only 4 mouse clicks: Home Page→Support→choose your model→Treo 600 (GSM)→User Guide. Ex. *Id.*; Ex. 1010 at 15→13→17→17→119-199.

Additionally, the PTM is a user manual that, by its very nature, is a public-facing document distributed with the smartphone packaging itself, further supporting that it is a printed publication. Ex. 1010 at 8 (“Inside the Treo 600 box is a...fairly thick user manual...”); *Cisco Systems, Inc. v. Centripetal Networks, Inc.*, 847 Fed.Appx. 869, 878 (Fed. Cir. 2021) (holding user manual was printed

publication); *Keysight Techs. Inc. v. Centripetal Networks*, IPR2022-01525 (27) (PTAB 2024). The totality of the evidence supports that the PTM was publicly accessible to those skilled in the art and constitutes a printed publication at least as of June 2004. Ex. 1002 at 51. The PTM was neither disclosed nor considered during prosecution of the application that issued as the '167 patent. Ex. 1001 at 1.

PTM discloses that Palm Treo devices include internal memory and a processor. Ex. 1006 at 97, 109, 112, 173. PTM also discloses that the Palm Treo devices had keyboards and system locks that required a password to be entered on the device prior to accessing data stored on the device. *Id.* at 24, 129; Ex. 1002 at 52.

D. Drummond (Ex. 1008)

U.S. Patent Publication No. 2003/0217005 to Drummond et al. ("Drummond") was published on November 20, 2003, more than a year before the priority date of the '167 patent and is thus prior art under pre-AIA 35 U.S.C. § 102(b). Drummond is directed to systems and methods of conducting secure transactions and is therefore in the same field of endeavor as the '167 patent. Ex. 1002 at 53. Drummond was not disclosed or considered during prosecution of the '167 patent. Ex. 1001 at 1.

Drummond discloses that in addition or alternatively to receiving paper receipts, electronic receipts may be sent to one or more devices. Ex. 1008 at [0246]-[0247]. The electronic receipts are sent via e-mail and/or text message (e.g., SMS), which enables the customer to: (1) choose to receive the receipt at a computer, such as their home or work computer, mobile phone, pager, PDA, other hand-held or portable computing device, or another device capable of receiving a message, (2) determine the level of information in the receipt, and (3) send additional receipt copies to additional selected systems and system addresses (e.g., a receipt may be sent to an associate or a party to a business transaction as an indication that a deposit or payment on a loan was made). *Id.* at [0246]-[0251], [0301], [0307]; Ex. 1002 at 54.

E. Raines (Ex. 1009)

U.S. Patent Publication No. 2004/0193538 to Raines (“Raines”) was published on September 30, 2004, before the priority date of the ’167 patent and is thus prior art under pre-AIA 35 U.S.C. § 102(b). Raines is directed to systems and methods of conducting secure transactions and is therefore in the same field of endeavor as the ’167 patent. Ex. 1002 at 55. Raines discloses that transaction data in a credit card transaction includes an account number and credit card expiration

data. Ex. 1009 at [0008]. Raines was not disclosed or considered during the prosecution of the '167 patent. Ex. 1001 at 1.

F. Denso (Ex. 1026)

Japanese Patent Publication No. JP 2002-109420 to Denso Co. Ltd. (“Denso”) was published on April 12, 2002, more than a year before the priority date of the '167 patent and is thus prior art under pre-AIA 35 U.S.C. § 102(b). Denso is directed to systems and methods of data communication, and in particular, data communication using two-dimensional matrix codes, and is therefore in the same field of endeavor as the '167 patent. Ex. 1026 at [0019], Ex. 1002 at 56. Denso was not disclosed or considered during the prosecution of the '167 patent. Ex. 1001 at 1.

X. Detailed Grounds of Unpatentability

A. Overview

Petitioner respectfully requests cancellation of Claims 1, 2, 4, 5, 7, 8, 12, 13, 17, 19-21, 23, 26, 27, 29, 30, 34, 39-41, and 43 of the '167 patent. The statutory grounds for the challenge of each claim are set forth below.

Ground	35 U.S.C.	Claims	Basis
I	§§ 102/103	1, 4, 5, 7, 12, 17, 23, 26, 27, 29, 34, 43	Anticipated by Wang. Obvious over Wang in view of Drummond
II	§ 102	1, 2, 4, 7, 12, 13, 17	Anticipated by Wang

Ground	35 U.S.C.	Claims	Basis
III	§ 103	19-21, 39-41	Obvious over Wang in view of Drummond
IV	§ 103	8, 30	Obvious over Wang in view of Denso
V	§ 103	13	Obvious over Wang in view of Raines
VI	§ 103	1, 4, 5, 7, 23, 26, 27, 29, 43	Obvious over TAO in view of PTM and Wang.

B. Ground I: Claims 1, 4, 5, 7, 12, 17, 23, 26, 27, 29, 34, and 43 are anticipated by Wang and obvious over Wang in view of Drummond.

Wang (Ex. 1004) discloses every feature of Claims 1, 4, 5, 7, 12, 17, 23, 26, 27, 29, 34, and 43 and thus anticipates these claims. Additionally, for the reasons discussed below, Wang in view of Drummond render these claims obvious.

Like challenged claim 1, Wang describes an apparatus and method for performing secure transactions. Ex. 1004 at [0002]. After authenticating a cell phone user, Wang describes that the cell phone may be used to scan barcodes to lookup prices from a lookup table for items to be purchased. *Id.* at [0072], [0115]. An output, such as an electronically signed receipt, may be generated based on the information from the lookup table and from predetermined information stored on the cellular phone. *Id.* These outputs may be forwarded to a user and may be digitally signed. *Id.* at [0108], [0112], [0115], [0123]. Wang also describes (i) the use of memory for storing program data, and (ii) the use of predetermined

information in the form of private keys that are used to digitally sign the outputs.

Id. at [0050], [0085], [0115]. Wang anticipates claim 1 or renders it obvious in view of Drummond. Ex. 1002 at 63-88.

Motivation to Combine Wang and Drummond

To the extent Wang does not disclose an output unit configured to “forward” an output generated by the processor, it would have been obvious to modify Wang to forward receipts via email or a text message, as explained by Drummond.

Drummond discloses that it was known to forward receipts using conventional output units to notify users of the status of a transaction. Ex. 1008 at [0246]-[0251], [0301], [0307]. A POSA would understand, for example, that by forwarding receipts via emails or SMS, the receipts can be sent to their personal devices for record keeping purposes, which could be important to cross-reference transactions against payment account statements such as credit card statements and/or retaining such documents for tax purposes. Additionally, users would be able to forward electronic copies of receipts to the merchant and/or to other interested individuals, for example, to another individual responsible for processing invoices or obtaining reimbursements. Drummond discloses that electronic receipts may be forwarded using message delivery protocols such email and SMS. Ex. 1008 at [0248]. Use of such message delivery protocols would

enable any mobile phone, including those disclosed in Wang, to forward the receipts. Ex. 1002 at 62, 115-116.

Further, Drummond indicates that the use of electronic receipts that are forwarded to another device provides several benefits over hard copy receipts, such as by enabling the customer to: (1) choose to receive the receipt at a computer, such as their home computer (e.g., pc), work computer, mobile phone, pager, PDA, other hand-held or portable computing device, or another device capable of receiving a message; (2) determine the level of information in the receipt; and (3) send additional receipt copies to additional selected systems and system addresses (e.g., a receipt may be sent to an associate or a party to a business transaction as an indication that a deposit or payment on a loan was made). *Id.* at [0246]-[0251], [0301], [0307]. For at least these reasons, a POSA would be motivated to modify Wang to forward its receipt outputs via email or SMS as taught by Drummond and would have had a reasonable expectation of success in doing so. Ex. 1002 at 62, 115-116.

The following claim charts demonstrate how the features of the challenged claims are disclosed by Wang, optionally in combination with Drummond.

Independent Claim 1

Claim 1	Wang (Ex. 1004)
[Preamble 1] 1. An apparatus for providing a secure transaction, the apparatus comprising:	Wang discloses an apparatus for providing a secure transaction. ⁴ Ex. 1002 at 63. “portable electronic authorization devices (PEADs) which eliminate the security risks associated with... approving transactions” [0002]. An “Internet enabled cellular telephone...may be used to implement a...PEAD.” [0108].
[1a] an image capture device configured to capture an image, the image having information embedded therein including information relating to a transaction;	Wang discloses an image capture device (e.g., a barcode or OCR scanner) that captures an image (e.g., a barcode or OCR image) that has information embedded therein (e.g., index data for price lookup) that is usable for generating an electronically signed receipt relating to a purchase transaction . [0115]. Ex. 1002 at 59, 62-63. “Another implementation of the... transaction is to use the PEAD as [a] self checkout terminal.” [0115] This includes “scanning in the...barcode using the input device built into the PEAD such as a barcode scanner or OCR reader ...generate the receipt with the list of item prices by querying the item price using the barcode as the index for price lookup table....” <i>Id.</i>
[1b] a memory configured to store predetermined information;	Wang discloses storing “the user’s private key” (predetermined information) in “ memory portion 304,” [0050] and discloses “the PEAD user can sign the receipt electronically using PEAD as described in

⁴ Although Wang discloses this feature, preambles are generally considered non-limiting.

Claim 1	Wang (Ex. 1004)
	U.S. Pat. No. 5,917,913.”⁵ [0115]. Wang discloses that “the PEAD may be employed to ‘sign’ any computer file for authentication purposes” and indicates that authentication is based on encryption “using the user’s private key.” [0085]. The private key is predetermined information since it is stored in the PEAD memory prior to initiation of any secure transactions. Ex. 1002 at 62-63.
[1c] an input unit configured to receive input information provided by a user;	“user authentication mechanism 612 may require the user to enter a password, to furnish fingerprints or a voice print, or other biometrics” [0073]. A password or fingerprint constitutes input information. Thus, a “user authentication mechanism...to enter a password...” is an input unit configured to receive input information provided by a user. Ex. 1002 at 62-63.
[1d] a processor configured to:	“A microcontroller...executes codes stored in flash memory...and employs [RAM]...for the execution.” [0074]. A microcontroller is a processor, and a POSA would appreciate that the Wang microcontroller is configured to perform elements 1e-g. as claimed. Ex. 1002 at 62-63, 74-77.

⁵ Wang repeatedly refers to U.S. Pat. No. 5,917,913 (Ex. 1027), which is effectively an internal cross-reference to Wang itself since the ’913 patent is related to Wang and includes generally the same disclosure as Wang [0002]-[0011] and [0018]-[0085]. *See* Document Comparison, Ex. 1012.

Claim 1	Wang (Ex. 1004)
[1e] verify the user based on the input information to ensure that the user is authorized to use the apparatus; and	“require the user to enter a password , to furnish fingerprints or a voice print, or other biometrics and/or identifying characteristics specific to the authorized user before PEAD 200 can be activated....” [0072].
[1f] generate an output based on the information embedded in the image and the predetermined information; and	Wang describes digitally signed “receipts” as outputs, which are based on image information (data from barcodes) and predetermined information (private key). Ex. 1002 at 62-63. After “agree[ing] to pay for the item, the user can approve the transaction by pressing the button on the phone....” The device then generates a digitally signed receipt as an output: “[T]he PEAD can generate the receipt....” [0115]. The digitally signed receipt is based on information embedded in an image (barcode information): “[T]he PEAD can generate the receipt...by querying the item price using the barcode as the index for price lookup table....” <i>Id.</i>; Ex. 1002 at 78. The digitally signed receipt is also based on the predetermined information (private key): “[T]he PEAD user can sign the receipt electronically using PEAD....” [0115]. “[T]he PEAD may be employed to ‘sign’ any computer file for authentication purposes” and indicates that authentication is based on encryption “using the user’s private key.” [0085]. Thus, the private key (predetermined information) is utilized to digitally sign the receipt. Ex. 1002 at 79-81.
[1g] an output unit configured to forward the output generated by the processor,	<u>Anticipation</u> Wang discloses two types of output devices, a display and a “local wireless communication port,” both of

Claim 1	Wang (Ex. 1004)
	which “forward” the output (digitally signed receipt), as properly construed in Section VI.B.1. 1. “presenting the electronic receipt over the phone.” [0115]. 2. “establishing the connection between the cellular phone and the receipt printer.” <i>Id.</i> <u>Obviousness</u>⁶ Additionally, it would have been obvious to modify Wang to send or “forward” the digitally signed receipt, e.g., to the user, in an email or text for the purpose of memorializing the transaction, as discussed above and as shown by Drummond. Ex. 1008 at [0246]-[0251], [0301], [0307]; Ex. 1002 at 62-63, 82-84.
[1h] wherein the output includes a digital signature to be used to signify authorization by the user with respect to the transaction.	“The PEAD user can sign the receipt electronically using PEAD.” [0115]. The output (digitally signed receipt) is electronically signed. An electronic signature as disclosed in Wang is a digital signature. [0108], [0112], [0123]. <i>See also</i> Ex. 1002 at 62-63, 85-88.

Dependent Claim 4

Claim 4	Wang (Ex. 1004)
4. The apparatus of claim 1 wherein the input information includes one of a personal identification number and biometric information.	“require the user to enter a password, to furnish fingerprints or a voice print, or other biometrics....” [0072], [0045]; Ex. 1002 at 89.

⁶ Since claims 4, 5, 7, 12 and 17 depend ultimately from claim 1, the alternative obviousness position concerning claim 1 applies equally to these claims.

Dependent Claim 5

Claim 5	Wang (Ex. 1004)
5. The apparatus of claim 1 wherein the output unit is a display.	“presenting the electronic receipt over the phone.” [0115]. Presenting the electronic receipt over the phone equates to displaying the receipt (i.e., the output). Ex. 1002 at 90.

Dependent Claim 7

Claim 7	Wang (Ex. 1004)
7. The apparatus of claim 1 wherein the image includes a barcode.	“scanning in the... barcode .” [0115]; Ex. 1002 at 91.

Dependent Claim 12

Claim 12	Wang (Ex. 1004)
12. The apparatus of claim 1 wherein the transaction includes an online transaction.	“employ the PEAD to perform any type of authentication tasks online .” [0084]. The transaction is described as being performed “through the wireless network and Internet...” i.e., online. [0115]; Ex. 1002 at 92.

Dependent Claim 17

Claim 17	Wang (Ex. 1004)
17. The apparatus of claim 1, wherein the apparatus is a cellphone.	“Internet enabled cellular telephone ...may be used to implement a...PEAD.” [0108]; Ex. 1002 at 93.

Independent Claim 23

Claim 23	Wang (Ex. 1004)
[Preamble 23] 23. A method of providing secure transaction, the method comprising:	Wang discloses a method for providing a secure transaction. <i>See Preamble 1 analysis.</i>
[23d] configuring a portable device to:	Wang discloses a PEAD (a portable device) having a microcontroller and memory configured to perform the steps described in Wang and outlined in this claim chart. [0074], [0115]. For the PEAD to perform the functions described in Wang, it must have been configured to do so. Ex. 1002 at 94, 74-77. <i>See also</i> Element 1d analysis.
[23a] capture an image, the image having information embedded therein, the information embedded in the image including information relating to a transaction;	Wang discloses an image capture device (e.g., a barcode or OCR scanner) that captures an image (e.g., a barcode or OCR image) that has information embedded therein (e.g., index data for price lookup) that is usable for generating an electronically signed receipt relating to a purchase transaction . [0115]. Ex. 1002 at 59, 94. “Another implementation of the... transaction is to use the PEAD as [a] self checkout terminal.” [0115]. This includes “scanning in the...barcode using the input device built into the PEAD such as a barcode scanner or OCR reader ...generate the receipt with the list of item prices by querying the item price using the barcode as the index for price lookup table” <i>Id.</i>

Claim 23	Wang (Ex. 1004)
[23b] store predetermined information;	Wang discloses storing “the user’s private key” (predetermined information) in “memory portion 304,” [0050] and discloses “the PEAD user can sign the receipt electronically using PEAD as described in U.S. Pat. No. 5,917,913.”⁷ [0115]. Wang discloses that “the PEAD may be employed to ‘sign’ any computer file for authentication purposes” and indicates that authentication is based on encryption “using the user’s private key.” [0085]. The private key is predetermined information since it is stored in the PEAD memory prior to initiation of any secure transactions. Ex. 1002 at 64-73.
[23c] receive input information provided by a user;	“user authentication mechanism 612 may require the user to enter a password, to furnish fingerprints or a voice print, or other biometrics...” [0072]. A password or fingerprint constitutes input information. Thus, a “user authentication mechanism...to enter a password...” is an input unit configured to receive input information provided by a user. <i>Id.</i>
[23e] verify the user based on the input information to ensure that the user is authorized to use the portable device;	“require the user to enter a password, to furnish fingerprints or a voice print, or other biometrics and/or identifying characteristics specific to the authorized user before PEAD 200 can be activated...” [0072].

⁷ See note 5 *supra*.

Claim 23	Wang (Ex. 1004)
[23f] generate an output based on the information embedded in the image and the predetermined information; and	Wang describes digitally signed “receipts” as outputs, which are based on image information (data from barcodes) and predetermined information (private key). Ex. 1002 at 94. After “agree[ing] to pay for the item, the user can approve the transaction by pressing the button on the phone....” The device then generates a digitally signed receipt as an output: “[T]he PEAD can generate the receipt....” [0115]. The digitally signed receipt is based on information embedded in an image (barcode information): “[T]he PEAD can generate the receipt...by querying the item price using the barcode as the index for price lookup table....” <i>Id.</i> Ex. 1002 at 78. The digitally signed receipt is also based on the predetermined information (private key): “[T]he PEAD user can sign the receipt electronically using PEAD....” [0115]. “[T]he PEAD may be employed to ‘sign’ any computer file for authentication purposes” and indicates that authentication is based on encryption “using the user’s private key.” [0085]. Thus, the private key (predetermined information) is utilized to digitally sign the receipt. Ex. 1002 at 79-81.

Claim 23	Wang (Ex. 1004)
[23g] forward the generated output to the user,	<u>Anticipation</u> <i>See</i> Element 1g analysis. Notably, displaying the receipt by the user would necessarily require forwarding (e.g., displaying) the receipt to the user . Similarly, the act of sending the receipt to the printer, the printout of which would be accessed <i>by the user</i> , constitutes forwarding the receipt to the user . <i>Id.</i> Ex. 1002 at 95-96. <u>Obviousness</u> ⁸ <i>See</i> Element 1g analysis.
[23h] wherein the output includes a digital signature to be used to signify authorization by the user with respect to the transaction.	“The PEAD user can sign the receipt electronically using PEAD....” [0115]. The output (digitally signed receipt) is electronically signed. An electronic signature as disclosed in Wang is a digital signature. [0108], [0112], [0123]. <i>See also</i> Ex. 1002 at 85-88.

⁸ Since claims 26, 27, 29, and 34 depend ultimately from claim 23, the alternative obviousness position concerning claim 23 applies equally to these claims.

Dependent Claim 26

Claim 26	Wang (Ex. 1004)
26. The method of claim 23 wherein the input information includes one of a personal identification number and biometric information.	<i>See</i> Claim 4 analysis. Ex. 1002 at 97.

Dependent Claim 27

Claim 27	Wang (Ex. 1004)
27. The method of claim 23 further comprising: configuring the portable device to display the output.	<i>See</i> Claim 5 analysis. To display the receipt image as taught by Wang, the PEAD must be configured to do so. Ex. 1002 at 98-99.

Dependent Claim 29

Claim 29	Wang (Ex. 1004)
29. The method of claim 23 wherein the image includes a barcode.	<i>See</i> Claim 7 analysis. Ex. 1002 at 100.

Dependent Claim 34

Claim 34	Wang (Ex. 1004)
34. The method of claim 23 wherein the transaction includes an online transaction.	<i>See</i> Claim 12 analysis. Ex. 1002 at 101.

Independent Claim 43

Claim 43	Wang (Ex. 1004)
Preamble 43	See Preamble 23 analysis.
Elements 43a-g	See Elements 23a-g analysis. ⁹
Element 43h	“Internet enabled cellular telephone ...may be used to implement a...PEAD.” [0108]; Ex. 1002 at 102.

C. GROUND II: Wang anticipates Claims 1, 2, 4, 7, 12, and 17.

Wang (Ex. 1004) discloses every feature of Claims 1, 2, 4, 7, 12 and 17 of the '167 patent. Wang describes multiple types of predetermined information and outputs. In addition to the “private key” predetermined information discussed in Ground 1, Wang discloses the use of predetermined information in the form of “user identification data,” which may include, for example, “the user’s name, his birth date, [or] his social security number,....” Ex. 1004 at [0045]. Likewise, in addition to an output in the form of a digitally signed receipt, as discussed in Ground 1, Wang discloses generating “transaction approval data” as an output. *Id.* at [0075]-[0083], [0115]. As shown in FIG. 3B, reproduced below, the transaction approval data 350 contains:

⁹ The alternative obviousness position discussed in elements 1g and 23g applies equally to claim 43 for element 43g.

transaction data 352, representing a portion of or the entire transaction request received...appended with certain user identification data 354....Once appended, the transaction approval data 350 is then encrypted prior to being retransmitted back to the electronic transaction system.

Id. at [0051].

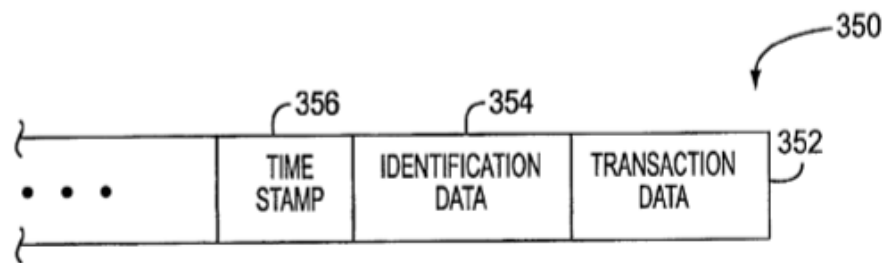


FIG. 3B

Wang's use of "user identification data" as predetermined information and "transaction approval data" as an output forms the basis of Ground 2.

Wang describes a PEAD apparatus (optionally a cellular phone) and method for performing secure transactions. *Id.* at [0002]. After authenticating a user of the cellular phone, Wang describes that a barcode scanner of the PEAD may be used to scan barcodes to select and lookup prices for items for a purchase transaction from a lookup table. *Id.* at [0072], [0115]. Outputs, such as transaction approval data, may be generated based on scanned barcode information (information embedded in an image) and on the user identification data (predetermined information) stored on

the PEAD. *Id.* at [0075]-[0083], [0115]. These outputs may be forwarded to a server of a transaction approval network and may be digitally signed. *Id.* at [0047]-[0051], [0108], [0112], [0115], [0123]. Wang discloses all features of Claims 1, 2, 4, 7, 12, and 17 for the reasons discussed below. *See also* Ex. 1002 at 103-111.

Independent Claim 1

Claim 1	Wang (Ex. 1004)
[Preamble 1] 1. An apparatus for providing a secure transaction, the apparatus comprising:	<i>See</i> Ground 1, Preamble 1 analysis.
[1a] an image capture device configured to capture an image, the image having information embedded therein including information relating to a transaction;	<i>See</i> Ground 1, Element 1a analysis.
[1b] a memory configured to store predetermined information;	“[U]ser identification data...are always kept secure within the PEAD 200....” [0044]. “the [transaction program]...receives user’s data from the user (e.g., the user’s identification data, any data which may be required for the proposed transaction such as the address information, quantity information, size information, method of payment, credit card number, account number, and the like)....” [0093]. “[I]f the user has already supplied the vendor with some of the requested data in the past (such as the user’s address), the TP may not ask for the same data

Claim 1	Wang (Ex. 1004)
	again...” indicating that it is stored in memory. [0094]. “Program/data memory” [0062]. “[A]ny of the required...user-supplied data may be stored in the PEAD....” [0098]. The user’s data is predetermined information stored in memory. Ex. 1002 at 106.
Element 1c-e	See Ground 1, Elements 1c-e analysis.
[1f] generate an output based on the information embedded in the image and the predetermined information; and	Wang describes that the PEAD can generate “transaction approval data” (an output) in response to the user agreeing to a transaction. [0075]-[0083], [0115]. <u>The output is based on information embedded in the image:</u> To approve and complete a transaction, the price of the item being purchased is required. [0115]. The price of the item is generated based on barcode data (information embedded in an image): “The cellular phone would display the price of the item the user entered (or scanned in). If the user agrees to pay for the item, the user can approve the transaction by pressing the button on the phone.” <i>Id.</i> Such approval, which is based on the embedded barcode image information, results in the generation of “transaction approval data.” [0076], [0115] (stating that “the approval process...is described in [related] U.S. Pat. 5,917,913,”¹⁰ which describes the generation of “transaction approval data” in response to approval of a transaction). <i>Id.</i> Thus, the transaction approval data (output) is based on price information embedded in a barcode image. Ex. 1002 at 78.

¹⁰ See note 5 *supra*.

Claim 1	Wang (Ex. 1004)
	<u>The output is based on predetermined information:</u> The transaction approval data is also based on predetermined information—specifically “user identification data.” Wang indicates that transaction approval data includes “transaction data,” and “user identification data.” [0051], FIG. 3B. The user identification data may include “the user’s name, his birth date, [or] his social security number...” [0045]. Thus, the transaction approval data (output) is based on user identification data (predetermined information).
[1g] an output unit configured to forward the output generated by the processor, wherein	“data path 212 is provided for transmitting [i.e., forwarding] transaction approval data...” [0047]-[0048]. The data path is an output unit used to transmit (forward) the transaction approval data. Ex. 1002 at 78.
[1h] the output includes a digital signature to be used to signify authorization by the user with respect to the transaction.	“the transaction approval data... may be appended with data representative of [sic: of] an ‘electronic signature’” [0051]. “The PEAD user can sign the receipt electronically using PEAD.” [0115]. When the output is transaction approval data, the output may be electronically signed. A POSA would understand that an electronic signature is a digital signature in view of Wang’s disclosure. [0108], [0112], [0123]. <i>See also</i> Ex. 1002 at 105.

Dependent Claim 2

Claim 2	Wang (Ex. 1004)
2. The apparatus of claim 1 wherein the processor is further configured to generate the output using the input information.	Wang discloses that the transaction approval data (output) includes “user identification data.” [0051]. The user identification data may include a password, “unique biometrics or unique identifying data such as fingerprint....” (input information). [0045]. <i>See also</i> Ex. 1002 at 107.

Dependent Claim 4

Claim 4	Wang (Ex. 1004)
4. The apparatus of claim 1 wherein the input information includes one of a personal identification number and biometric information.	<i>See</i> Ground 1, Claim 4 analysis. <i>See also</i> Ex. 1002 at 108.

Dependent Claim 7

Claim 7	Wang (Ex. 1004)
7. The apparatus of claim 1 wherein the image includes a barcode.	<i>See</i> Ground 1, Claim 7 analysis. <i>See also</i> Ex. 1002 at 109.

Dependent Claim 12

Claim 12	Wang (Ex. 1004)
12. The apparatus of claim 1 wherein the transaction includes an online transaction.	<i>See</i> Ground 1, Claim 12 analysis. <i>See also</i> Ex. 1002 at 110.

Dependent Claim 17

Claim 17	Wang
17. The apparatus of claim 1, wherein the apparatus is a cellphone.	<i>See</i> Ground 1, Claim 17 analysis. <i>See also</i> Ex. 1002 at 111.

D. GROUND III: Claims 19-21 and 39-41 are obvious over Wang in view of Drummond.

Claims 19-21 and 39-41 are obvious over Wang (Ex. 1004) in view of Drummond (Ex. 1008), as shown below.

As discussed above in Ground 1, Wang describes an apparatus and method for performing secure transactions. Ex. 1004 at [0002]. After authenticating a user of the cellular phone, Wang describes that a barcode scanner of a cellular phone may be used to scan barcodes to select and lookup prices for items for a purchase transaction from a lookup table. *Id.* at [0072], [0115]. Outputs, such as digitally signed receipts, may be generated based on user identification data and a private key (both predetermined information) stored on the cellular phone prior to scanning the barcodes. *Id.* at [0064], [0072], [0115]. The receipts may be forwarded to a user. *Id.* at [0115]. Although implied, Wang does not expressly disclose that the output unit includes control logic configured to forward the output using a message delivery protocol. Petitioner submits that it would be obvious to modify Wang to include an output unit that includes control logic configured to

forward the receipts using well-known email and SMS message delivery protocol as taught, for example, by Drummond, thereby rendering the challenged claims obvious. Ex. 1008 at [0246]-[0251], [0301], [0307]; Ex. 1002 at 112-131.

Motivation to Combine Wang and Drummond

Wang discloses that an output, e.g., a digitally signed receipt, may be forwarded. Ex. 1004 at [0115]. As a practical matter, a POSA would appreciate that computing devices operate using control logic. Ex. 1002 at 118-123. Thus, a POSA would understand that the output unit of Wang includes control logic for implementing the forwarding of the output. *Id.* Drummond discloses that it was known to use message delivery protocols (such as SMS and email) to forward receipts using known output units to notify users of a status of a transaction. Ex. 1008 at [0246]-[0251], [0301], [0307]. Forwarding the receipts using a message delivery protocol (such as SMS or email) would enable any number of devices, including computers, cellular phones, and the like, to receive such outputs using standard delivery protocols without modification, as the email and SMS message delivery protocols were common data formats that were already supported by a large array of devices, including cellular phones, such as those disclosed in Wang. Thus, email and SMS communications constitute a finite number of identified, predictable solutions for cellular communications under *KSR*. A POSA would

further be motivated to use message delivery protocols such as email and SMS to forward the receipts of Wang to eliminate the need to install any specialized software on either the transmitting or receiving device. Ex. 1002 at 62, 82-84.

Additionally, by modifying Wang to forward the receipt using a message delivery protocol as taught by Drummond, the end user may send a record of the transaction (e.g., the receipt) to any number of conventional devices for storage and later reference. This could be helpful, for example, for tax purposes or to save receipts on a business trip for later reimbursement. Forwarding receipts via SMS may be particularly desirable if the system employs a firewall, as described by Drummond. Ex. 1008 at [0301]. Further, Drummond indicates that the use of electronic receipts that are forwarded using a message delivery protocol provides several benefits over hard copy receipts, such as by enabling the customer to: (1) choose to receive the receipt at a computer, such as their home computer (e.g., pc), work computer, mobile phone, pager, PDA, other hand-held or portable computing device, or another device capable of receiving a message; (2) determine the level of information in the receipt; and (3) send additional receipt copies to additional selected systems and system addresses (e.g., a receipt may be sent to an associate or a party to a business transaction as an indication that a deposit or payment on a loan was made). *Id.* at [0247]-[0251], [0301], [0307]; Ex. 1002 at 62.

For at least these reasons, a POSA would be motivated to modify Wang to forward its receipt outputs using a message delivery protocol as taught by Drummond. Ex. 1002 at 114-116.

The following claim charts demonstrate how these claims are rendered obvious by Wang in view of Drummond.

Independent Claim 19

Claim 19	Wang (Ex. 1004) and Drummond (Ex. 1008)
[Preamble 19] 19. An apparatus for providing a secure transaction, the apparatus comprising:	<i>See</i> Ground 1, Preamble 1 analysis.
[19a-f]	<i>See</i> Ground 1, Elements 1a-f analysis.
[19g] an output unit configured to forward the output generated by the processor, wherein	Drummond discloses output units configured to forward the output (receipts) generated by the processor via email or SMS. Ex. 1008 at [0247] (e.g., “host computer”), [0301], FIG. 65 (e.g., device 912). Ex. 1002 at 62, 82-84, 117.
[19h] the output unit includes control logic configured to forward the output using a message delivery protocol.	“presenting the electronic receipt over the phone” Ex. 1004 at [0115]. “establishing the connection between the cellular phone and the receipt printer” <i>Id.</i> “The receipt may be...in the form of an e-mail message sent to one or more e-mail addresses...[and] may also be a text message sent to a phone number of a mobile phone, pager, PDA, or other portable computing device.” Ex. 1008 at [0247], [0301].

Claim 19	Wang (Ex. 1004) and Drummond (Ex. 1008)
	A POSA would understand that sending e-mail and text messages requires using message delivery protocol. Ex. 1002 at 117-126.

Dependent Claim 20

Claim 20	Wang (Ex. 1004) and Drummond (Ex. 1008)
20. The apparatus of claim 19 wherein the message delivery protocol includes the Short Message Service.	<i>See</i> Ground 3, Elements 19g-h. “electronic receipt may also be a text message sent to a phone number of a mobile phone” Ex. 1008 at [0247], [0301]. The receipt may be sent “using the SMS protocol.” <i>Id.</i> at [0301]. <i>See also</i> Ex. 1002 at 127.

Dependent Claim 21

Claim 21	Wang (Ex. 1004) and Drummond (Ex. 1008)
21. The apparatus of claim 19 wherein the message delivery protocol includes email.	<i>See</i> Ground 3, Elements 19g-h. “receipt may be...in the form of an e-mail message sent to one or more e-mail addresses” Ex. 1008 at [0247]. <i>See also</i> Ex. 1002 at 128.

Independent Claim 39

Claim 39	Wang (Ex. 1004) and Drummond (Ex. 1008)
39. A method of providing secure transaction, the method comprising:	<i>See</i> Ground 1, Preamble 23 analysis.
Elements 39a-f	<i>See</i> Ground 1, Elements 23a-f analysis.

Claim 39	Wang (Ex. 1004) and Drummond (Ex. 1008)
forward the generated output to the user using a message delivery protocol.	<i>See</i> Ground 3, Elements 19g-h. “receipt may be...in the form of an e-mail message sent to one or more e-mail addresses...may also be a text message sent to a phone number of a mobile phone, pager, PDA, or other portable computing device.” Ex. 1008 at [0247], [0301]. <i>See also</i> Ex. 1002 at 129.

Dependent Claim 40

Claim 40	Wang (Ex. 1004) and Drummond (Ex. 1008)
40. The method of claim 30 wherein the message delivery protocol includes the Short Message Service.	<i>See</i> Ground 3, Claim 20. <i>See also</i> Ex. 1002 at 130.

Dependent Claim 41

Claim 41	Wang (Ex. 1004) and Drummond (Ex. 1008)
41. The method of claim 39 wherein the message delivery protocol includes email.	<i>See</i> Ground 3, Claim 21. <i>See also</i> Ex. 1002 at 131.

E. GROUND IV: Claims 8 and 30 are obvious over Wang and Denso.

Claims 8 and 30 are invalid as obvious over Wang (Ex. 1004) in view of Denso (Ex. 1026) for the reasons that follow.

As discussed above in Grounds 1 and 2, Wang describes an apparatus and method for performing secure transactions. Ex. 1004 at [0002]. After

authenticating a user of the cellular phone, Wang describes that a barcode scanner of a cellular phone may be used to scan barcodes to select and lookup prices for items for a purchase transaction from a lookup table. *Id.* at [0072], [0115]. Outputs, such as electronically signed receipts (Ground 1) and transaction approval data (Ground 2) may be generated based on the information from the lookup table and from predetermined information stored on the cellular phone prior to scanning the barcodes. *Id.* at [0072]-[0083], [0115]. These outputs may be forwarded to a user and may be digitally signed. *Id.* at [0108], [0112], [0115], [0123]. Wang does not, however, disclose that the barcode is a multi-dimensional barcode. Petitioner submits that it would have been obvious to modify Wang to use a multi-dimensional barcode as taught by Denso for the reasons discussed below. Ex. 1026 at [0013]; Ex. 1002 at 132-136.

Motivation to Combine Wang and Denso

Wang discloses that a barcode may be used to store information useable as an index to lookup an item price. Ex. 1004 at [0115]. Denso discloses that it was well known to use barcodes and multi-dimensional barcodes interchangeably to serve as an information code. Ex. 1026 at [0013]. The use of a two-dimensional barcode in place of a standard barcode would enable more data to be encoded within the same space, as the use of two-dimensions increases the data density of

the image. The additional data capacity would not only support a greater amount of data, but would also support additional types of data, such as uniform resource locators (URLs), binary codes, and structured data. Multi-dimensional barcodes provide other benefits over standard barcodes, such as supporting error-correction that enables the multi-dimensional barcode to be read even if a portion of the barcode is stained or missing and the ability to be read at various angles. For at least these reasons, a POSA would be motivated to modify Wang to use a multi-dimensional barcode as the barcode as taught by Denso. Ex. 1002 at 134-135.

The following claim charts demonstrate how Claims 8 and 30 are obvious over Wang in view of Denso. Ex. 1002 at 136.

Dependent Claims 8, 30

Claims 8, 30	Wang (Ex. 1004) and Denso (Ex. 1026)
8. The apparatus of claim 7 wherein the barcode includes a multi-dimensional barcode.	“ barcode ” Ex. 1004 at [0115].
30. The method of claim 29 wherein the barcode includes a multi-dimensional barcode.	“ an information code such as a barcode or a two-dimensional code. ” Ex. 1026 at [0013].

F. GROUND V: Claim 13 is obvious over Wang and Raines.

Claim 13 is obvious over Wang (Ex. 1004) in view of Raines (Ex. 1009), as explained below.

As discussed in Ground 2, Wang discloses all of the features of Claim 1. Wang discloses that the transaction approval data (output) includes user identification data and transaction data. Ex. 1004 at [0045], [0051]. Wang does not, however, explicitly disclose that the transaction approval data includes information relating to a payment card account. Petitioner submits that it would be obvious to modify Wang to include an account number and expiration date of a credit card in its transaction approval data as taught, for example, by Raines, thereby rendering the challenged claims obvious. Ex. 1002 at 137-144.

Motivation to Combine Wang with Raines

Wang discloses that transaction approval data (e.g., an output) is generated based on and includes user identification data and transaction data. Ex. 1004 at [0051]. Wang discloses that user's data from the user (e.g., user-supplied data) includes a credit card number and that the user-supplied data may be stored on the PEAD. Ex. 1004 at [0093]. Raines discloses that it was known to include the account number and expiration date of the credit card in transaction information, as this information is necessary for a credit card transaction to be processed. Ex. 1009

at [0008]. Without the inclusion of the credit card number in the transaction data, the purchase transaction using the PEAD could not be completed. Therefore, a POSA would be motivated to modify Wang to include the previously stored credit card number as transaction data in the transaction approval data (output) as taught by Raines to enable the transaction to be completed. Ex. 1002 at 140-142.

The following claim charts demonstrate how the features of Claim 13 are disclosed or rendered obvious by Wang in view of Raines. Ex. 1002 at 143.

Dependent Claim 13

Claim 13	Wang (Ex. 1004) and Raines (Ex. 1009)
13. The apparatus of claim 1 wherein the predetermined information includes information relating to a payment card account; and	Wang recognizes that credit cards may be used for the transaction. Ex. 1004 at [0093]. Wang states that the transaction approval data includes “transaction data.” <i>Id.</i> at [0051]. A POSA would appreciate that transaction data would include information relating to a payment card account to the extent a card was used for the transaction. <i>Id.</i> ; Ex. 1002 at 140-142. Wang discloses that “user’s data from the user” (e.g., user-supplied data) includes “a credit card number” and that “user-supplied data may be stored on the PEAD.” Ex. 1004 at [0093], [0098]. “[A] merchant must collect a variety of data associated with the transaction” including “the account number and expiration date of the credit card” and “the merchant transmits the transaction data.” Ex. 1009 at [0008]. <i>See also</i> Ex. 1002 at 140-143.
wherein the output further includes some or all of the information relating to the payment card account to be used for payment with respect to the transaction.	A POSA would recognize that for a transaction funded with a card account, the transaction approval data (output) in Wang would include some or all such credit card information as relevant “transaction data.” Ex. 1004 at [0051]; Ex. 1002 at 144.

G. GROUND VI: Claims 1, 4, 5, 7, 23, 26, 27, 29, and 43 are obvious over TAO in view of PTM and Wang.

Claims 1, 4, 5, 7, 23, 26, 27, 29, and 43 are obvious over TAO (Ex. 1005) in view of PTM (Ex. 1006) and Wang (Ex. 1004), as explained below and in the following claim charts.

As discussed above, TAO describes an apparatus and method for performing secure transactions. Ex. 1005 at 1-3. A user may scan in products using a barcode scanner of a cellular phone, such as the Palm Treo, which may add the products to an order. *Id.* Predetermined information about standard discounts is stored on the cellular phone and may be selected and added to the order. *Id.* The order may be generated by the cellular phone and forwarded to a user. *Id.* TAO does not expressly disclose that the cellular phone includes a memory, a processor, or an input device for verifying the user based on input information, or that the output includes a digital signature to be used to signify authorization by the user with respect to the transaction. It would have been obvious, however, to modify TAO to include such features—which were well-known to be present on the Palm Treo device—for the reasons discussed below, thereby rendering the challenged claims obvious. Ex. 1002 at 145-172.

Motivation to Combine TAO with PTM and Wang

TAO does not explicitly disclose a memory that stores predetermined information. TAO discloses that standard discounts may be stored on the device and that its software may be used on the Palm Treo cellular phone. Ex. 1005 at 1-2. PTM indicates that the Palm Treo includes internal memory, which may store various information. Ex. 1006 at 112. A POSA would recognize that a cellular

phone as disclosed by TAO would require a memory to properly function, to store the software for use by the cellular phone, and to store the standard discounts referenced in TAO. Ex 1002 at 147. Additionally, the use of an internal memory would enable the software to store standard discounts and customer data, such as the name and address, on the internal memory to enable quicker order generation by eliminating the need to enter such data by hand. *Id.* For at least these reasons, a POSA would be motivated to modify TAO to store the predetermined information in the memory of a cellular phone as taught by PTM. *Id.*

TAO also fails to explicitly disclose an input device for receiving input information and verifying the user based on the input information, but TAO discloses that its software may be used on the Palm Treo cellular phone, which includes a keyboard (an input device). Ex. 1005 at 1-3. PTM indicates that the Palm Treo includes a keyboard and a system lock that requires input of a password to verify the user to access data on the device. Ex. 1006 at 24, 129. Use of a keyboard to enter a password for a system lock as taught by PTM would enable the user to restrict access to the handheld device to only authorized users, thereby enhancing security and protecting customer data stored on the device. Ex. 1002 at 148. More specifically, the use of a password would prevent unauthorized users from attempting to generate unauthorized orders using the cellular phone. *Id.*

Additionally, the requirement of a password to access TAO's device would add a level of trust between the merchant and customer, as both parties would have assurance that the user conducting the transaction on the handheld device was an authorized user. For at least these reasons, a POSA would be motivated to modify TAO to include a keyboard (e.g., input device) and require a password for authentication as taught by PTM. *Id.*

TAO also fails to explicitly disclose a processor. Here too, TAO discloses that its software may be used on the Palm Treo cellular phone. Ex. 1005 at 1-3; *see also* Ex. 1034 at 5-6. PTM indicates that the Palm Treo includes a processor. Ex. 1006 at 173. A POSA would recognize that the cellular phone disclosed by TAO would require a processor to properly function and to execute the software installed on the cellular phone to facilitate the generation of orders (outputs). Ex. 1002 at 149. For at least these reasons, a POSA would be motivated to modify TAO to include a processor as taught by PTM. *Id.*

TAO fails to explicitly disclose that the output includes a digital signature to be used to signify authorization by the user with respect to the transaction. TAO discloses outputting an electronic order (e.g., a record of a purchase transaction, or a receipt), while Wang discloses that electronic receipts may include electronic signatures. Ex. 1005 at 1-3; Ex. 1004 at [0115]. Wang discloses that electronic

signatures may be generated by appending identification data (such as private keys) onto the receipt. Ex. 1004 at [0051], [0108], [0112], [0123]. The inclusion of an electronic signature on a receipt would allow the receiving party, such as a merchant, to identity and authenticate the party sending the order. Ex. 1002 at 150-156. As taught by Wang, access to private keys for electronic signatures may be accessed only after successful authentication of the user. Ex. 1004 at [0123]. The authentication of the user and subsequent electronic signature accompanying the receipt therefore provides assurance of the identity of the device user to other parties (including a payment processor) in e-commerce transactions who otherwise cannot verify the identity of the device user due to the online nature of the purchase. Ex. 1002 at 155. For at least these reasons, a POSA would be motivated to modify TAO to modify the order (output) to have a digital signature as taught by Wang. *Id.*

Concerning Claims 4 and 26, TAO fails to explicitly disclose that the input information includes one of a personal identification number and biometric information. TAO discloses that its software may be used on cellular phones, such as the Palm Treo cellular phone, which includes a system lock that requires input of a password to access data on the device, as evidenced by PTM. Ex. 1005 at 1-3; Ex. 1006 at 129. Wang discloses that it was known to use biometrics (such as

fingerprints, voice prints, or other biometrics) to authenticate a user of a cellular phone. Ex. 1004 at [0072]. Use of biometrics, rather than just a password, would enhance the security of the device and transactions performed using the device. Ex. 1002 at 157. More specifically, as disclosed in Wang, the use of biometrics provides more complicated and elaborate authentication data than a simple password and make it harder for an unauthorized user to access and utilize the TAO device. Ex. 1004 at [0045]. Biometrics, such as voice prints, would be possible using existing hardware of a cellular phone, such as a Treo, and would also provide enhanced security over a password alone. Ex. 1002 at 157. For at least these reasons, a POSA would be motivated to modify TAO to utilize a biometric as input information as taught by Wang. *Id.*

Independent Claim 1

Claim 1	TAO (Ex. 1005), PTM (Ex. 1006), and Wang (Ex. 1004)
[Preamble 1] 1. An apparatus for providing a secure transaction, the apparatus comprising:	“the handheld tool” is an apparatus. Ex. 1005 at 1. “Taking orders from customers...” is a transaction. <i>Id.</i> “Our software runs on...PalmOS...and is licensed for use on handheld devices made by palmOne (including the Treo...).” <i>Id.</i> at 3. The Treo “[r]equires a password to see any data...” indicating that it is secure. Ex. 1006 at 24, 129.

Claim 1	TAO (Ex. 1005), PTM (Ex. 1006), and Wang (Ex. 1004)
	Wang discloses an apparatus for providing a secure transaction. “portable electronic authorization devices (PEADs) which eliminate the security risks associated with... approving transactions ...” Ex. 1004 at [0002].
[1a] an image capture device configured to capture an image, the image having information embedded therein including information relating to a transaction;	“barcode-scanning capability..., a PalmOS handheld equipped with a barcode scanner.” Ex. 1005 at 3. “point the scanner at the product, press the scan button, and the item is added to the order!” <i>Id.</i> at 2. A barcode scanner is an image capture device. Ex. 1002 at 59. TAO discloses an image capture device that captures an image (e.g., a barcode) that has information embedded therein (e.g., a pointer that identifies an item of a product catalog) that is usable for a purchase transaction. <i>Id.</i> at 146.
[1b] a memory configured to store predetermined information;	“Our software runs on the Palm operating system....and is licensed for use on handheld devices made by palmOne (including the Treo...)” Ex. 1005 at 3. “If that customer has a standard discount, the order will be automatically set to indicate that.” <i>Id.</i> at 2. The standard discount is “predetermined information.” Ex. 1002 at 159-162. The Palm Treo has an “internal memory” and a POSA would understand that the standard discount information is stored in memory in order to be “automatically set to indicate that” as indicated by TAO. Ex. 1006 at 97, 109, 112; Ex. 1002 at 147, 159-162.
[1c] an input unit configured to receive input information provided by a user;	“use on handheld devices made by palmOne (including the Treo” Ex. 1005 at 3. The Treo has a “keyboard,” which is an input unit, and

Claim 1	TAO (Ex. 1005), PTM (Ex. 1006), and Wang (Ex. 1004)
	“[r]equires a password to see any data....” Ex. 1006 at 24, 129; Ex. 1002 at 148. A password is “input information.”
[1d] a processor configured to:	“use on handheld devices made by palmOne (including the Treo” Ex. 1005 at 3. “144 MHz Texas Instruments OMAP (ARM) processor.” Ex. 1006 at 73. The Treo has a processor and a POSA would recognize that, like other handheld devices, the processor is configured to perform the various functions of the device. Ex. 1002 at 149.
[1e] verify the user based on the input information to ensure that the user is authorized to use the apparatus; and	“use on handheld devices made by palmOne (including the Treo....” Ex. 1005 at 3. “Requires a password to see any data....” Ex. 1006 at 129.
[1f] generate an output based on the information embedded in the image and the predetermined information; and	“point the scanner at the product, press the scan button, and the item is added to the order!” Ex. 1005 at 1. “If that customer has a standard discount, the order will be automatically set to indicate that....” <i>Id.</i> at 2. The order is an output generated by the handheld device based on the information embedded in the image (e.g., the barcode), which is used to add items to the order and the predetermined information (e.g., the standard discount). Ex. 1002 at 146, 158.
[1g] an output unit configured to forward the output generated by the processor, wherein	“the order and summary information are transferred to your desktop....” Ex. 1005 at 3. The order (e.g., output) is forwarded by an output unit of the handheld device to a desktop computer. Ex. 1002 at 146, 158.

Claim 1	TAO (Ex. 1005), PTM (Ex. 1006), and Wang (Ex. 1004)
[1h] the output includes a digital signature to be used to signify authorization by the user with respect to the transaction.	“As a further example, the PEAD may be employed to sign any computer file for authentication purposes (e.g., to authenticate the date or the user).” Ex. 1004 at [0085]. A POSA would understand from TAO in view of Wang that the order of TAO may include a digital signature, as described in Wang, to provide verification that the order was created by an authorized user. Ex. 1002 at 150-156.

Dependent Claim 4

Claim 4	TAO (Ex. 1005), PTM (Ex. 1006), and Wang (Ex. 1004)
Element 4	“use on handheld devices made by palmOne (including the Treo” Ex. 1005 at 3. “Requires a password to see any data....” Ex. 1006 at 129. “require the user to enter a password, to furnish fingerprints or a voice print, or other biometrics” Ex. 1004 at [0073]. Ex. 1002 at 163.

Dependent Claim 5

Claim 5	TAO (Ex. 1005), PTM (Ex. 1006), and Wang (Ex. 1004)
5. The apparatus of claim 1 wherein the output unit is a display.	“the day’s sales are summarized and displayed and/or printed.” Ex. 1005 at 2-3. The day’s sales (e.g., orders) is an output that is presented on a display. Ex. 1002 at 164.

Dependent Claim 7

Claim 7	TAO (Ex. 1005), PTM (Ex. 1006), and Wang (Ex. 1004)
7. The apparatus of claim 1 wherein the image includes a barcode.	“barcode-scanning capability...a PalmOS handheld equipped with a barcode scanner”. Ex. 1005 at 3. “point the scanner at the product, press the scan button, and the item is added to the order!” <i>Id.</i> at 1; Ex. 1002 at 165.

Independent Claim 23

Claim 23	TAO (Ex. 1005), PTM (Ex. 1006), and Wang (Ex. 1004)
23. A method of providing secure transaction, the method comprising:	<i>See</i> Ground 6, Element 1 preamble. TAO discloses a method for providing a secure transaction. Ex. 1002 at 166.
configuring a portable device to:	TAO discloses a handheld device configured to perform the steps described in TAO and outlined in this claim chart. For the device to perform the functions described in TAO, it must have been configured to do so. Ex. 1002 at 167. <i>See also</i> Ground 6, Element 1d analysis. “software runs... on handheld devices made by palmOne (including the Treo...)” Ex. 1005 at 3. Software is used to configure the portable device to perform various functions. Ex. 1002 at 167.
Element 23a-c,e,f	<i>See</i> Ground 6, Elements 1a-c,e,f analyses.
[23g] forward the generated output to the user,	“the order and summary information are transferred to your desktop” Ex. 1005 at 3. The use of “your” indicates the output is forwarded “to the user.” Ex. 1002 at 168. The order (e.g., output) is forwarded by an output unit of the handheld device to a desktop computer. <i>Id.</i>

Claim 23	TAO (Ex. 1005), PTM (Ex. 1006), and Wang (Ex. 1004)
[23h] wherein the output includes a digital signature to be used to signify authorization by the user with respect to the transaction.	<i>See</i> Ground 6, Element 1h. <i>See also</i> Ex. 1002 at 150-156.

Dependent Claim 26

Claim 26	TAO (Ex. 1005), PTM (Ex. 1006), and Wang (Ex. 1004)
26. The method of claim 23 wherein the input information includes one of a personal identification number and biometric information.	<i>See</i> Ground 6, Claim 4 analysis. <i>See also</i> Ex. 1002 at 169.

Dependent Claim 27

Claim 27	TAO (Ex. 1005), PTM (Ex. 1006), and Wang (Ex. 1004)
27. The method of claim 23 further comprising: configuring the portable device to display the output.	<i>See</i> Ground 6, Claim 5 analysis. To display the order as taught by TAO, the device must be configured to do so. Ex. 1002 at 170.

Dependent Claim 29

Claim 29	TAO (Ex. 1005), PTM (Ex. 1006), and Wang (Ex. 1004)
29. The method of claim 23 wherein the image includes a barcode.	<i>See</i> Ground 6, Claim 7 analysis. <i>See also</i> Ex. 1002 at 171.

Independent Claim 43

Claim 43	TAO (Ex. 1005), PTM (Ex. 1006) and Wang (Ex. 1004)
Preamble 43	<i>See</i> Ground 6, Preamble 23 analysis.
Elements 43a-g	<i>See</i> Ground 6, Elements 23a-g analysis.
Element 43h	“software runs on...handheld devices made by palmOne (including the Treo...)” Ex. 1005 at 1-2. The Palm Treo is a cellular phone. Ex. 1006 at 1; Ex. 1002 at 172.

XI. Conclusion

For the foregoing reasons, Petitioner respectfully requests cancellation of Claims 1, 2, 4, 5, 7, 8, 12, 13, 17, 19-21, 23, 26, 27, 29, 30, 34, 39-41, and 43 of U.S. Patent No. 7,314,167.

Respectfully submitted,

Dated: July 29, 2024

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U.S. PATENT NO. 7,314,167 CLAIM APPENDIX

1. An apparatus for providing a secure transaction, the apparatus comprising:	Preamble 1
an image capture device configured to capture an image, the image having information embedded therein including information relating to a transaction;	Element 1a
a memory configured to store predetermined information;	Element 1b
an input unit configured to receive input information provided by a user;	Element 1c
a processor configured to:	Element 1d
verify the user based on the input information to ensure that the user is authorized to use the apparatus; and	Element 1e
generate an output based on the information embedded in the image and the predetermined information; and	Element 1f
an output unit configured to forward the output generated by the processor, wherein	Element 1g
the output includes a digital signature to be used to signify authorization by the user with respect to the transaction.	Element 1h
2. The apparatus of claim 1 wherein the processor is further configured to	Element 2

generate the output using the input information.	
3. The apparatus of claim 1 wherein the processor is further configured to decode the information embedded in the image for use in generating the output by using a decryption algorithm.	Element 3
4. The apparatus of claim 1 wherein the input information includes one of a personal identification number and biometric information.	Element 4
5. The apparatus of claim 1 wherein the output unit is a display.	Element 5
6. The apparatus of claim 1 wherein the output is provided to a verifier, the verifier having access to the information embedded in the image.	Element 6
7. The apparatus of claim 1 wherein the image includes a barcode.	Element 7
8. The apparatus of claim 7 wherein the barcode includes a multi-dimensional barcode.	Element 8
9. The apparatus of claim 1 wherein the image includes a set of barcodes.	Element 9
10. The apparatus of claim 9 wherein the set of barcodes includes a set of multi-dimensional barcodes.	Element 10
11. The apparatus of claim 1 wherein the output includes an authentication	Element 11

code to be used to authenticate the user with respect to the transaction.	
12. The apparatus of claim 1 wherein the transaction includes an online transaction.	Element 12
13. The apparatus of claim 1 wherein the predetermined information includes information relating to a payment card account; and	Element 13a
wherein the output further includes some or all of the information relating to the payment card account to be used for payment with respect to the transaction.	Element 13b
14. The apparatus of claim 1 wherein the information embedded in the image includes information relating to a password to be used to unlock a secured document; and	Element 14a
wherein the output includes the password to be used to unlock the secured document.	Element 14b
15. The apparatus of claim 1 wherein the information embedded in the image includes information relating to a challenge; and	Element 15a
wherein the output includes a password to be used to satisfy the challenge and unlock a secured document.	Element 15b
16. The apparatus of claim 1 wherein the information embedded in the image	Element 16a

includes information provided by a vendor relating to a pending transaction; and	
wherein the output includes some or all of the information provided by the vendor to be used to alert the user with respect to the pending transaction.	Element 16b
17. The apparatus of claim 1, wherein the apparatus is a cellphone.	Element 17
18. The apparatus of claim 1, wherein the apparatus includes a smartcard claim 1.	Element 18
19. An apparatus for providing a secure transaction, the apparatus comprising:	Preamble 19
an image capture device configured to capture an image, the image having information embedded therein;	Element 19a
a memory configured to store predetermined location;	Element 19b
an input unit configured to receive input information provided by a user;	Element 19c
a processor configured to:	Element 19d
verify the user based on the input information to ensure that the user is authorized to use the apparatus; and	Element 19e
generate an output based on the information embedded in the image and the predetermined information; and	Element 19f

an output unit configured to forward the output generated by the processor, wherein	Element 19g
the output unit includes control logic configured to forward the output using a message delivery protocol.	Element 19h
20. The apparatus of claim 19 wherein the message delivery protocol includes the Short Message Service.	Element 20
21. The apparatus of claim 19 wherein the message delivery protocol includes email.	Element 21
22. The apparatus of claim 19 wherein the message delivery protocol includes the Extended Message Service.	Element 22
23. A method of providing secure transaction, the method comprising:	Preamble 23
configuring a portable device to:	Element 23d ¹¹
capture an image, the image having information embedded therein, the information embedded in the image including information relating to a transaction;	Element 23a
store predetermined information;	Element 23b

¹¹ In the claim appendix and claim charts, sub-elements a-h of claim 23 are presented out of order so that they correspond to similar sub-elements of claim 1.

receive input information provided by a user;	Element 23c
verify the user based on the input information to ensure that the user is authorized to use the portable device;	Element 23e
generate an output based on the information embedded in the image and the predetermined information; and	Element 23f
forward the generated output to the user,	Element 23g
wherein the output includes a digital signature to be used to signify authorization by the user with respect to the transaction.	Element 23h
24. The method of claim 23 further comprising: configuring the portable device to generate the output using the input information.	Element 24
25. The method of claim 23 further comprising: configuring the portable device to decode the information embedded in the image for use in generating the output by using a decryption algorithm.	Element 25
26. The method of claim 23 wherein the input information includes one of a personal identification number and biometric information.	Element 26

27. The method of claim 23 further comprising: configuring the portable device to display the output.	Element 27
28. The method of claim 23 wherein the output is provided to a verifier, the verifier having access to the information embedded in the image.	Element 28
29. The method of claim 23 wherein the image includes a barcode.	Element 29
30. The method of claim 29 wherein the barcode includes a multi-dimensional barcode.	Element 30
31. The method of claim 23 wherein the image includes a set of barcodes.	Element 31
32. The method of claim 31 wherein the set of barcodes includes a set of multi-dimensional barcodes.	Element 32
33. The method of claim 23 wherein the output represents an authentication code to be used to authenticate the user with respect to the transaction.	Element 33
34. The method of claim 23 wherein the transaction includes an online transaction.	Element 34
35. The method of claim 23 wherein the predetermined information includes information relating to a payment card account; and	Element 35a

wherein the output further includes some or all of the information relating to the payment card account to be used for payment with respect to the transaction.	Element 35b
36. The method of claim 23 wherein the information embedded in the image includes information relating to a password to be used to unlock a secured document;	Element 36a
and wherein the output includes the password to be used to unlock the secured document.	Element 36b
37. The method of claim 23 wherein the information embedded in the image includes information provided by a vendor relating to a pending transaction; and	Element 37a
wherein the output includes some or all of the information provided by the vendor to be used to alert the user with respect to the pending transaction.	Element 37b
38. The method of claim 23 wherein the information embedded in the image includes information relating to a challenge;	Element 38a
wherein the output includes a password to be used to satisfy the challenge and unlock a secured document.	Element 38b
39. A method of providing secure transaction, the method comprising:	Preamble 39

configuring a portable device to:	Element 39a
capture an image, the image having information embedded therein;	Element 39b
store predetermined information;	Element 39c
receive input information provided by a user;	Element 39d
verify the user based on the input information to ensure that the user is authorized to use the portable device;	Element 39e
generate an output based on the information embedded in the image and the predetermined information; and	Element 39f
forward the generated output to the user using a message delivery protocol.	Element 39g
40. The method of claim 30 wherein the message delivery protocol includes the Short Message Service.	Element 40
41. The method of claim 39 wherein the message delivery protocol includes email.	Element 41
42. The method of claim 39 wherein the message delivery protocol includes the 5 Extended Message Service.	Element 42
43. A method of providing secure transaction, the method comprising:	Preamble 43
configuring a portable device to:	Element 43a

capture an image, the image having information embedded therein;	Element 43b
store predetermined information;	Element 43c
receive input information provided by a user;	Element 43d
verify the user based on the input information to ensure that the user is authorized to use the portable device;	Element 43e
generate an output based on the information embedded in the image and the predetermined information; and	Element 43f
forward the generated output to the user,	Element 43g
wherein the portable device includes one of a cell phone, a personal digital assistant, and a smartcard.	Element 43h

CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 7,314,167, the accompanying Power of Attorney, and Exhibits 1001-1035 have been served in their entireties on July 29, 2024, via Federal Express, upon the USPTO counsel of record:

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CERTIFICATE OF COMPLIANCE

The undersigned certifies that this brief complies with the type-volume limitations of 37 CFR § 42.24(a)(1)(i). This brief contains 12,823 words as measured by the word processing software used to prepare the document, exclusive of table of contents, mandatory notices, certificates of service and compliance and appendix of exhibits.

The undersigned further certifies that this brief complies with the typeface requirements of 37 CFR § 42.6(a)(2)(ii) and typestyle requirements of 37 CFR § 42.6(a)(2)(iii). This brief has been prepared in a proportionally spaced typeface using Microsoft Word 2016 in Times New Roman 14 point font.

Dated: July 29, 2024

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