

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KIOSOFT TECHNOLOGIES, LLC and TECHTREX, INC.
Petitioners

v.

PAYRANGE, INC.
Patent Owner

U.S. Patent No. 11,501,296
Issued: November 15, 2022
Filed: January 12, 2021
Inventor: Paresh K. Patel
Title: Method And System For Presenting Representations Of Payment Accepting
Unit Events

Post-Grant Review No. Unassigned

**DECLARATION OF SAFWAN ZAHEER IN SUPPORT OF PETITION
FOR POST-GRANT REVIEW OF U.S. PATENT NO. 11,501,296**

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EX1012

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I, Safwan Zaheer, declare as follows:

I. Introduction

1. I have been asked by KioSoft Technologies LLC and TechTrex, Inc. (“Petitioners” and, collectively, “KioSoft”) to provide my opinions in the above-captioned post-grant review proceeding involving U.S. Patent No. 11,501,296 (“the ‘296 Patent,” EX1001), which is titled “Method and System for Presenting Representations of Payment Accepting Unit Events.” Except as otherwise indicated, I have personal knowledge of the facts and opinions set forth in this declaration and believe them to be true. If called upon to do so, I will testify competently thereto.

2. I am being compensated on an hourly basis for the time I spend in connection with the proceeding. My compensation is not dependent in any way on the substance of my opinions or on the outcome of this proceeding. I have no financial interest in the outcome of this matter or any other litigation between Petitioners and PayRange, Inc.

II. Qualifications and Experience

3. A copy of my *curriculum vitae* is provided as Exhibit 1013.

4. I obtained a Bachelor of Science in Electrical Engineering from Texas A&M University in 1998, a Master of Engineering in Electrical Engineering from

Texas A&M University in 2000, and a Master of Science in Engineering and Management from the Massachusetts Institute of Technology (MIT) in 2008.

5. From 2001-2010, I was the Senior Product Manager of Mobile Products and a Wireless Engineer of the International Standards Development groups at Lucent Technologies/ Alcatel-Lucent (now Nokia).

6. From 2010-2011, I was a management consultant at Peppers & Rogers Group, providing consulting services to global firms in the telecom and internet industries.

7. From 2012-2015, I was employed by Barclays US as the Director of Digital Payments Product, where I led the development and launch of an innovative mobile payment wallet that enabled payment transactions between a mobile device and a point-of-sale (POS) at a merchant location to purchase goods or products.

8. From 2015-2016, I was the Director of Digital Payments at Accenture, and from 2016-2019 Head of FinTech at KPMG. During my time at both firms, I controlled and led several digital payments, transformation, strategy and product development services to financial services, technology, and retail clients, increasing company brand reputation and repeat business.

9. In 2021, I was the Executive Vice President & General Manager at LendingPoint, responsible for the POS Lending and Payments business. In that role, I led the launch of a payments and lending capability inside of Invisalign's

national mobile app enabling customers to get credit through an application within the mobile app for dental treatment.

10. I am currently the Managing Director of HundredX, an advisory firm in the payment and FinTech space. In that role, I helped to launch T-Mobile MONEY, T-Mobile's revolutionary Neobank.

11. I am also a named inventor on the following patents or applications: US Patent Appl. No. 13/647997 (US), UK Appl. No. 1209590.7 titled "Mobile Wallet System"; US Patent Appl. No. 13/725061 titled "Mobile Commerce Business System and Method for Sharing Merchant Content and creating Customer Index"; and US Patent No. 7,200,115: "A Method of Managing Non-acknowledgement responses in CDMA Wireless System."

III. Summary of My Opinions

12. To assist and orient the reader in reviewing this declaration, I have provided a summary of my main opinion below. A person of ordinary skill in the art ("POSITA") at the time of the alleged invention would have found the subject matter of claims 1-28 of the '296 Patent (the "Challenged Claims") to be obvious in view of the prior art. A POSITA would have also found each of the Challenged Claims, whether on an element-by-element basis or as a whole, to be well-understood, routine, and conventional.

13. The specific grounds of unpatentability in which I render an opinion are identified below:

Ground	Statute(s)	Challenge	Challenged Claim(s)
1	§101	Subject Matter Eligibility	1-28
2	§103	Obviousness by U.S. 10,210,501 (“Low,” EX1003) in view of U.S. 9,898,884 (“Arora,” EX1004) and further in view of U.S. 8,255,323 (“Casey,” EX1005, which incorporated by reference in its entirety U.S. Patent Application Publication No. 2010/0082485 to Lin et al. (“Lin,” EX1006))	1-28
3	§112(b)	Indefiniteness	17

IV. Materials Considered

14. In formulating my opinions, I have relied upon my training, knowledge, and experience that are relevant to the ’296 Patent. I have specifically considered the following documents, in addition to all other documents cited in this declaration:

Exhibit No.	Description
1001	U.S. Patent No. 11,501,296 to Patel et al. (“’296 Patent”)
1002	Prosecution History of the ’296 Patent
1003	U.S. Patent No. 10,210,501 to Low et al. (“Low”)
1004	U.S. Patent No. 9,898,884 to Arora et al. (“Arora”)

1005	U.S. Patent No. 8,255,323 to Casey et al. (“Casey”)
1006	U.S. Patent Application Publication No. 2010/0082485 to Lin et al. (“Lin”)

V. Relevant Legal Standards

15. I am not a lawyer. In forming my opinions, I have relied upon various legal principles, as explained to me by Petitioners’ counsel. My understanding of these principles is summarized below.

16. I understand that a patent claim defines the scope of an alleged invention. I further understand that a claimed invention must be new, useful, and non-obvious over the prior art as of its earliest filing date for it to be patentable. I have been asked to assume that the date upon which I should base my analysis is December 18, 2013. I understand that in this proceeding, Petitioners have the burden of proving that the Challenged Claims would have been unpatentable over the prior art by a preponderance of the evidence. I understand that “a preponderance of the evidence” is evidence sufficient to show that a fact is more likely true than not.

17. In determining the patentability of a claim, I understand that the first step is to understand the claim from the perspective of a POSITA to determine its meaning and scope. With that understanding, I have considered the claims at issue against the prior art from the perspective of a POSITA.

18. I understand that a patent or other publication must first qualify as prior art before it can be used to invalidate a patent claim. I understand that documents and materials that qualify as prior art can be used to render a claim unpatentable as anticipated under 35 U.S.C. § 102 or as obvious under 35 U.S.C. § 103.

A. Level of Ordinary Skill

19. I have been advised that a POSITA is a hypothetical person who is presumed to have known the relevant art at the time of the invention. I further understand that a POSITA is also a person of ordinary creativity and that in many cases a POSITA will be able to fit the teachings of multiple patents or printed publications together. I also understand that the factors that may be considered in determining the level of ordinary skill in a particular field include: the level of education and experience of those working in the field, the types of problems encountered in the field, and the sophistication of the technology at the time of the invention, which I have been asked to assume is December 18, 2013. I understand that all of the above factors may be present in a particular case. I understand that a POSITA would have knowledge from the teachings of the prior art, including the art discussed below.

20. It is my opinion that, on or before December 18, 2013, a POSITA relating to the technology of the '296 Patent would have had an education background of, or practical experience providing an equivalent to, a Bachelor of

Science in Electrical Engineering, Computer Science, Information Technology, or a related/equivalent field and at least 3 years of academic or industry experience in electronic payment systems.

21. Well before December 18, 2013, my level of skill in the art was at least that of POSITA. I am qualified to provide opinions concerning what a POSITA would have known and understood as of December 18, 2013, and, unless otherwise stated, my analysis, opinions, and conclusions herein are made from the perspective of POSITA as of that date. I reserve the right to change my opinion if other facts are provided as the proceedings continue.

B. Claim Construction

22. I have been advised that claim terms are generally given their plain and ordinary meaning in light of the specification. I further understand that the plain and ordinary meaning may not apply when a patentee acts as his own lexicographer and sets out a definition for the term or when the patentee disavows the full scope of the claim term either in the specification or during prosecution.

23. I have read each word in the claims, and the claims as a whole, of the '296 Patent in light of the specification, applying the plain and ordinary meaning of each such word as POSITA would understand it. I offer no opinion herein on the merits of the claim construction, but I reserve the right to do so in the future.

24. Accordingly, in formulating my opinions, I reviewed the claims of the '296 Patent as I perceive a POSITA would have understood them as of December 18, 2013, after reading the entire '296 Patent specification.

C. Subject Matter Eligibility

25. I understand that in order to receive a patent an inventor must invent or discover a new and useful process, machine, manufacture, or composition of matter.

26. I understand that claims directed to laws of nature, natural phenomenon, and abstract ideas are not patent-eligible.

27. I understand that when a patent claim is directed to an abstract idea, the claim is invalid unless the claim contains an “inventive concept” which must be an element or some combination of elements that ensures the patent claim amounts to significantly more than a patent claim on the abstract idea itself. I understand that an inventive concept cannot be a well-understood, routine, and conventional activity previously known to the industry. I also understand that a “wholly generic computer implementation” is not generally sufficient to provide an inventive concept. I understand that the elements of a claim must be considered both individually and also as an ordered combination in determining whether they include an inventive concept.

28. I understand that it is insufficient for patent-eligibility if the additional elements merely append to the claim well-understood, routine, and conventional activities previously known to the industry, specified at a high level of generality.

D. Obviousness

29. I understand that the claims of a patent must be non-obvious in order to be eligible for patent protection under 35 U.S.C. §103. I understand that a patent claim may be invalid under 35 U.S.C. §103 if the differences between the claimed invention and the prior art are such that the claimed invention, as a whole, would have been obvious to a POSITA in view of a prior art reference or combination of prior art references before the earliest filing date of the claimed invention.

30. I understand that obviousness is determined from the perspective of a POSITA and that the asserted claims of the patent should be read from the point of view of such a person at the time the claimed invention was made. Additionally, I understand that a POSITA is presumed to know and be familiar with the relevant prior art in the field of endeavor covered by the patent in suit or reasonably pertinent to the particular problem faced by the inventor.

31. I understand that prior art used in an obviousness analysis must be analogous—and that there are two criteria for determining whether prior art is analogous and thus would be assumed to be known to a POSITA: first, whether the art is from the same field of endeavor as the invention, regardless of the problem

addressed, and, second, if the reference is not within the same field of endeavor as the invention, whether the reference still is reasonably pertinent to the particular problem with which the inventor was faced.

32. I further understand that the field of endeavor of a patent is not limited to the specific point of novelty, the narrowest possible conception of the field, or the particular focus within a given field. I also understand that a reference is reasonably pertinent if, even though it is in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering the problem.

33. I understand that an analysis of whether a claimed invention would have been obvious should be considered in view of (i) the scope and content of the prior art, (ii) any differences between the prior art and the claimed invention, (iii) the level of ordinary skill in the relevant art, and (iv) secondary considerations of non-obviousness (discussed below). I also understand that a prior art reference should be viewed as a whole.

34. I understand that a prior art reference can disclose a claimed feature either because that feature is expressly described in the prior art reference, or because that feature is inherent in the disclosure of the prior art reference. I understand that something is inherent in a prior art reference only if the missing

descriptive matter must necessarily be present. I also understand that inherency cannot be established by probabilities or possibilities, and the mere fact that something may result from a given set of circumstances is not enough for inherency.

35. I understand that, for a claim to be obvious, a POSITA must have had (in addition to a motivation to combine) a reasonable expectation of success in practicing the claimed invention based on the prior art. Whether a skilled artisan would have had a reasonable expectation of success is determined based on the degree of unpredictability in the art as well as the guidance provided by the art.

36. I understand that obviousness can be established by combining or modifying the teachings of the prior art to achieve the claimed invention. I understand that the reason to combine prior art references must be shown. This reason to combine can come from a variety of sources, not just the prior art itself or the specific problem the patentee was trying to solve. And I understand that the references themselves need not provide a specific hint or suggestion of the alteration needed to arrive at the claimed invention; the analysis may include recourse to logic, judgment, and common sense available to a POSITA that does not necessarily require explanation in any reference. It is also my understanding that when there is a reason to modify or combine the prior art to achieve the claimed invention, there must also be a reasonable expectation of success in so doing.

37. I understand that a combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. I understand that when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a POSITA has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated outcome, then that outcome is likely a product not of innovation, but of ordinary skill and common sense, and therefore is considered obvious according to patent laws.

38. I understand that when a POSITA would have reached the claimed invention through routine optimization, the invention may be deemed obvious. I understand that such routine optimization can involve testing an element or parameter that is termed a “results-effective” variable (that is, a variable that achieves a recognized result). I understand that routine optimization involves using only routine techniques and ordinary skill of a POSITA.

39. I understand that courts have held that when there is a “design need” or “market demand” and there are a “finite number” of solutions, it would have been obvious for a POSITA to try such solutions. When the general conditions of a claim are disclosed in the prior art, I understand it is not inventive to discover the optimum or workable ranges by routine experimentation.

40. I understand that a dependent claim (that is, each of claims 2-14, 16-21, and 23-28 of the '296 Patent) contains all of the elements of the independent claim from which it depends (as well as any elements of any dependent claim from which another dependent claim depends), in addition to the additional elements recited in the dependent claim language itself.

41. I understand that when considering the obviousness of an invention, a POSITA should also consider whether there are any objective indicia (also known as secondary considerations) that support the non-obviousness of the invention. I understand that objective indicia of non-obviousness include, but are not limited to, commercial success, long-felt but unmet need, failure of others, praise in the industry, and unexpected superior results. I am not aware of any objective indicia that would change my opinion regarding the claims of the '296 Patent.

42. As discussed herein, I have concluded that each of the Challenged Claims is obvious and thus invalid and unpatentable at least under 35 U.S.C. § 103 for obviousness based on the references described below.

E. Indefiniteness

43. I understand that a claim is indefinite if it fails to inform a POSITA, with reasonable certainty, the scope of the invention. Moreover, I also understand that claims must particularly and distinctly set out what is claimed so that the public has fair notice of the claimed invention. For example, if the language of a claim

may be read and understood in more than one way by a POSITA, then that claim is indefinite. I understand that the claim must be read in light of the disclosure of the patent, the teachings of the prior art, and the knowledge of a POSITA at the time of the invention of the claim. Further, I understand that each term in a claim must find clear support or antecedent basis in the specification.

VI. Overview of the Alleged Invention

44. The '296 Patent is titled "Method And System For Presenting Representations Of Payment Accepting Unit Events" and relates to "mobile-device-to-machine payment processing systems over a non-persistent network." EX1001, 1:33-35.

45. The '296 Patent describes that "[t]he mobile-device-to-machine payment processing system disclosed herein allows a user (having a mobile device [] with a mobile application [] thereon) to make a cashless purchase from a payment accepting unit [] (having an adapter module [] associated therewith." *Id.*, 5:65-6:2. The '296 Patent explains that "[v]ending machines are one type of 'payment accepting unit,'" and further explains that other types of payment accepting units include parking meters, toll booths, laundromat washer and dryers, and kiosks. *Id.*, 1:48-59.

46. The '296 Patent acknowledges that "[v]ending machines (or 'automatic retailing' machines), in the broadest sense, have been around for

thousands of years.” *Id.*, 1:39-40. However, the ’296 Patent recognizes that “[m]obile payment is a logical extension,” *Id.*, 2:12, “[a]s the number of people with Internet-connected mobile devices proliferates....” *Id.* 2:4-9.

47. The ’296 Patent describes “wireless communications” between the mobile device and the payment accepting unit as including conventional “long-range” and “short-range” “communication technology” or “protocol” including:

Bluetooth (such as Bluetooth 4.0, Bluetooth Smart, Bluetooth Low Energy (BLE)), near-field communication (NFC), Ultra Wideband (UWB), radio frequency identification (RFID), infrared wireless, induction wireless, or any wired or wireless technology that could be used to communicate a small distance (approximately a hundred feet or closer) that is known or yet to be discovered).... The communications technology shown in the figures may be replaced with alternative like communications technology and, therefore, specific shown communications technologies are not meant to be limiting. For example, Wi-Fi technology could be replaced with another long-range communication technology.

Id., 9:62-10-13.

48. The ’296 Patent includes twenty eight claims, including three independent claims, each directed to substantially the same subject matter in the form of a method, a system, and a computer-readable storage medium.

49. Independent claim 1 of the ’296 Patent recites:

[1.0] A method of executing payment accepting unit events, comprising:

[1.1] at a mobile device with one or more processors, memory, one or more output devices including a display, and one or more radio transceivers:

[1.2] detecting one or more payment accepting units in proximity to the mobile device, [1.3] including detecting predefined radio transmissions broadcast by the one or more payment accepting units, [1.4] wherein the one or more payment accepting units are payment operated machines that accept payment for dispensing of products and/or services;

[1.5] displaying a user interface of a mobile payment application on the display of the mobile device, [1.6] the user interface being configured to display a visual indication of the one or more payment accepting units and [1.7.1] accept user input to (i) receive selection by a user of the mobile device of an available payment accepting unit of the one or more payment accepting units and [1.7.2] (ii) trigger payment by the mobile payment application for a transaction initiated by the user of the mobile device with the available payment accepting unit of the one or more payment accepting units;

[1.8] establishing via the one or more radio transceivers a wireless connection between the mobile device and the available payment accepting unit of the one or more payment accepting units;

[1.9] after establishing the wireless connection, enabling user interaction with the user interface of the mobile payment application to complete the transaction;

[1.10] exchanging information with the available payment accepting unit via the one or more radio transceivers, in conjunction with the transaction; and

[1.11] in response to receiving the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device.

Id., 46:61-47:30 (identifying bracketed numbers added).

50. For convenience, I have added the bracketed numbers and will use those bracketed numbers below in my analysis when referring to the claim elements.

51. Both independent claims 15 and 22 recite the same elements [1.2]-[1.11]. However, instead of claiming a process, Claim 15 claims a mobile device, *Id.*, 48:30-67 (claim 15 stating in part “A mobile device comprising...”), while Claim 22 claims a non-transitory computer readable storage medium, *id.*, 49:44-50:24 (claim 22 stating in part “A non-transitory computer readable storage medium...”).

VII. Technology Background

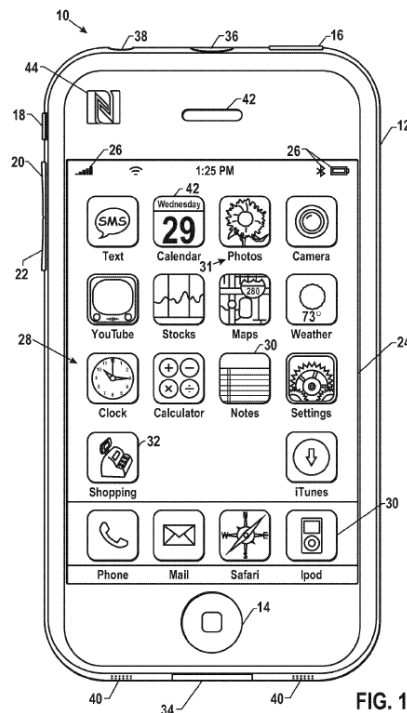
52. Years before December 18, 2013 (for reference, the first iPhone was released in June 2007), mobile devices such as smartphones and tablet devices were widespread and well known and used all of the features and technologies claimed

by the '296 Patent, including wireless technology and the ability to interface with the mobile device through a graphical user interface ("GUI"). For example, Casey (EX1005) discloses that even by August 1, 2012, electronic devices such as the iPhone had features including:

- the ability to communicate with other devices using short-range communications such as Bluetooth and near-field communication. *Id.*, 3:65-4:03;
- user input structures including "buttons, switches, control pads, keys, knobs, scroll wheels," among "other suitable forms." *Id.*, 4:36-39;
- a display that may be used to display a GUI to allow a "user to interact with the device," which may include "various layers, windows, screens, templates, or other graphical elements," and "include icons and other images representing buttons, sliders, menu bars, and the like." *Id.*, 4:23-27;
- input and output ports such as connection ports for transmitting and receiving data, including a barcode reader, a connection slot such as a SIM card, and an audio jack, among other features. *Id.*, 5:24-43
- a CPU that controls the operation of the device. *Id.*, 6:15-25
- long-term storage. *Id.*, 6:26-50

- one or more network cards that provide an interface for connecting to a network, including a local area network (LAN), wide area network (WAN), or a personal area network (PAN) for connecting to a Bluetooth network, ZigBee network, or an ultrawideband network (UWB). *Id.*, 6:51-7:12;
- a motion-sensing device configured to sense motion of the device and transmit motion data to the CPU. *Id.*, 8:4-13; and
- ability of a mobile device to make payments online or in-store via an application in the mobile device. *Id.*, 1:20-27, 5:3-8.

53. Figure 1 of Casey discloses some of these well-known features:



Id., FIG. 1.

54. Casey discloses an electronic device that includes a display 24 that may include a touch screen and may be used to display a GUI to allow a user to interact with the device. The GUI can include “various layers, windows, screens, templates, or other graphical elements that may be displayed in all, or a portion of, the display,” and which “graphical elements may include icons and other images representing buttons, sliders, menu bars, and the like....” *Id.*, 4:41-58.

55. For example, the “Swipe” feature was known as well, as was an application for conducting online and in-store shopping, for example, as described in Casey at Figures 4-13, and the accompanying text. *Id.*, FIGS. 4-13, 11:3-19:35.

56. In addition, the concept of conducting a transaction between two devices in close proximity or in contact with each other, including to make a payment transaction, was well known. EX1005, 17:19-50, 17:52-18:2; EX1006, ¶¶[101], [0112], [0150].

57. For reference, I reproduce below some but not all of the figures of Casey for convenience.

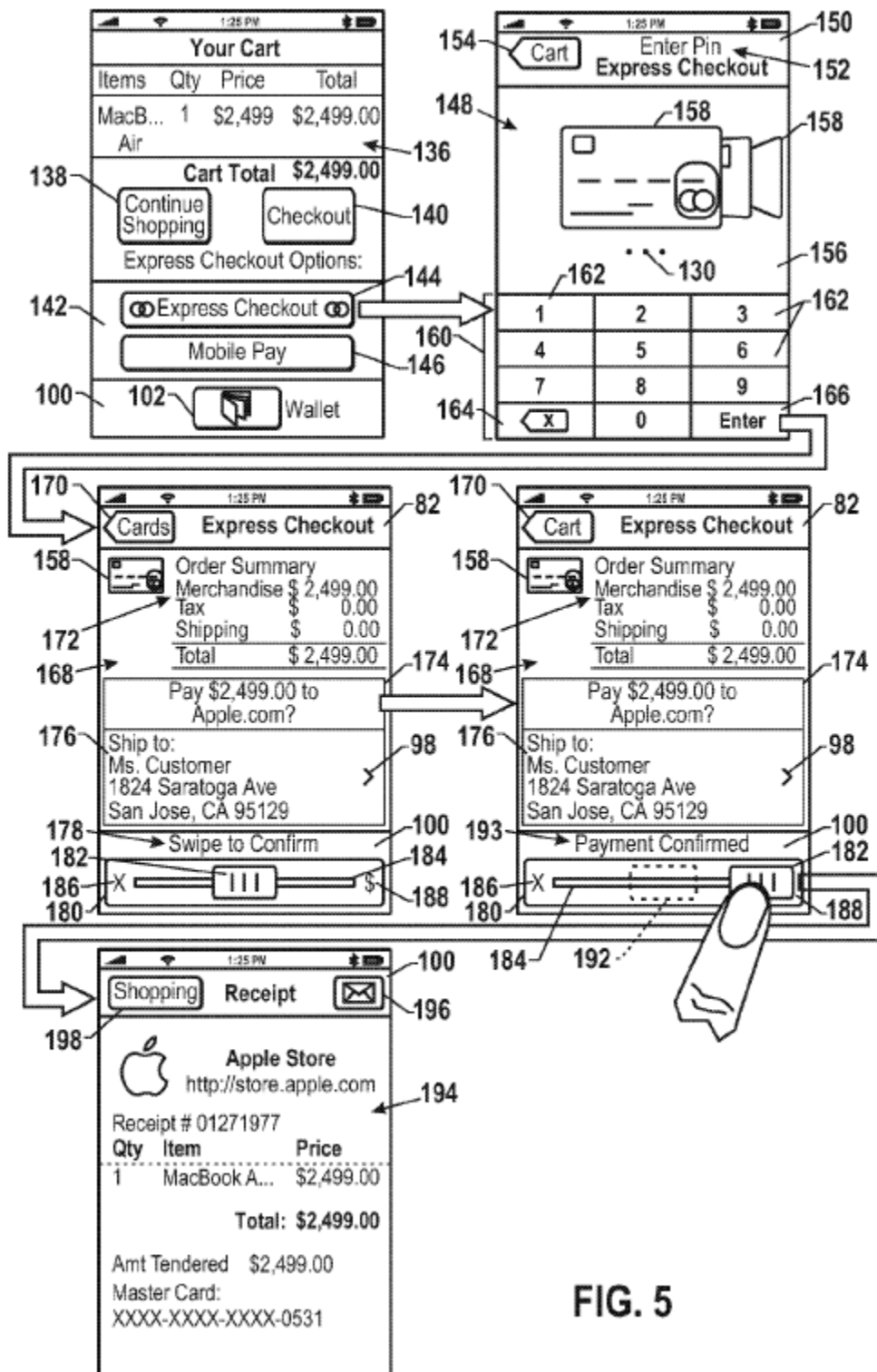


FIG. 5

Id., FIG. 5.

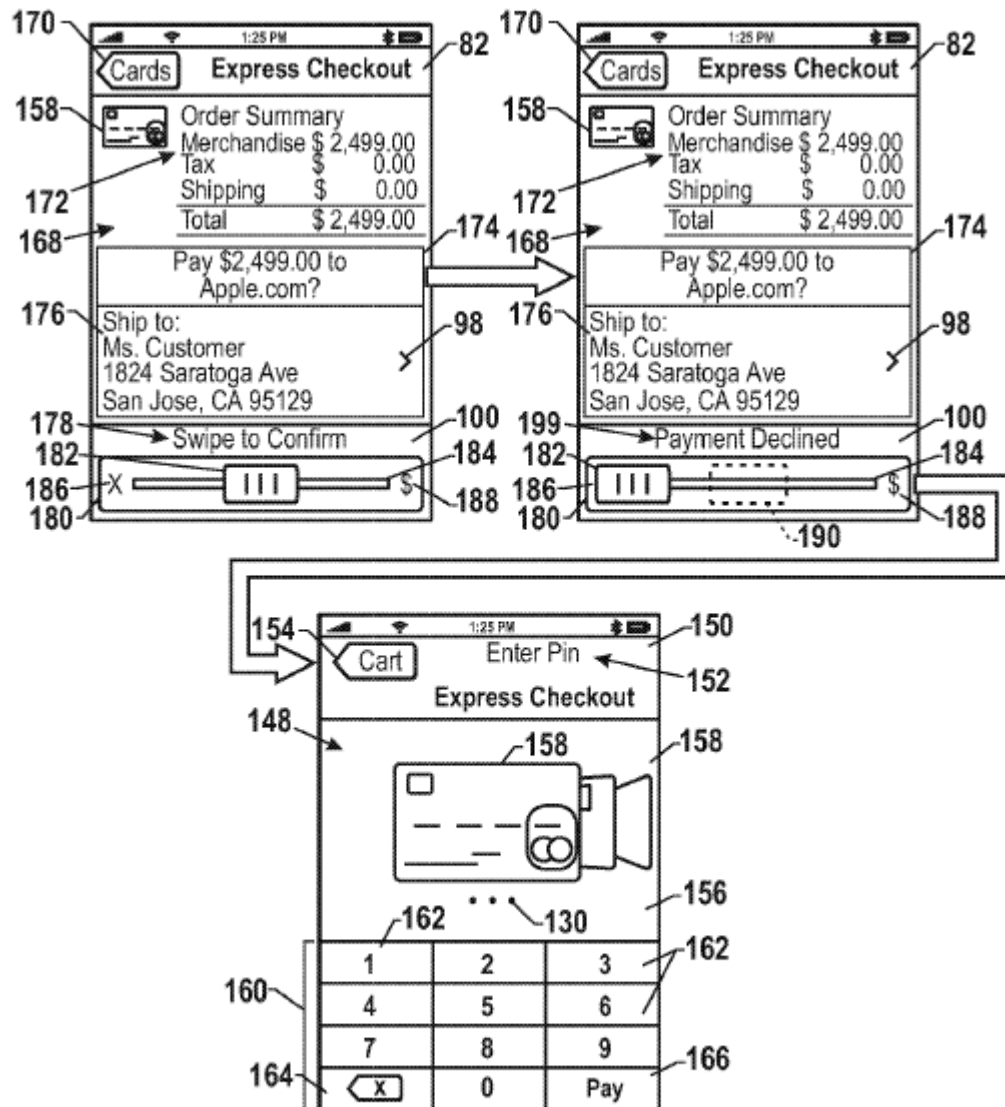


FIG. 6

Id., FIG. 6.

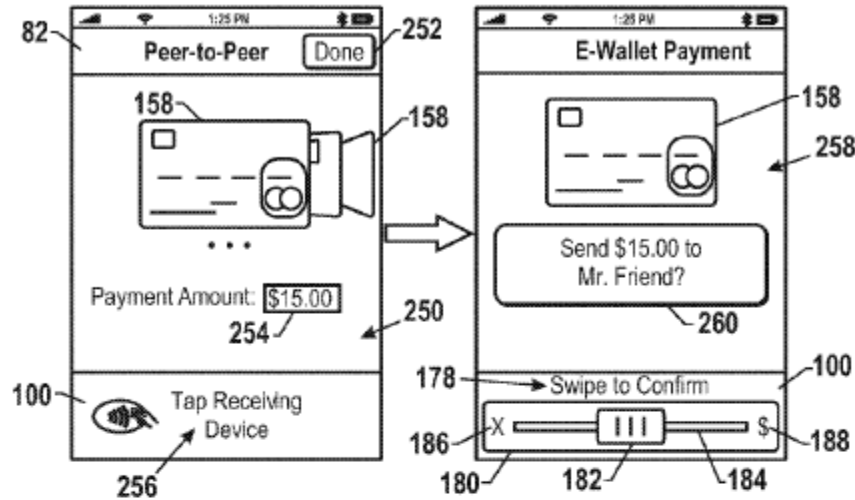


FIG. 11

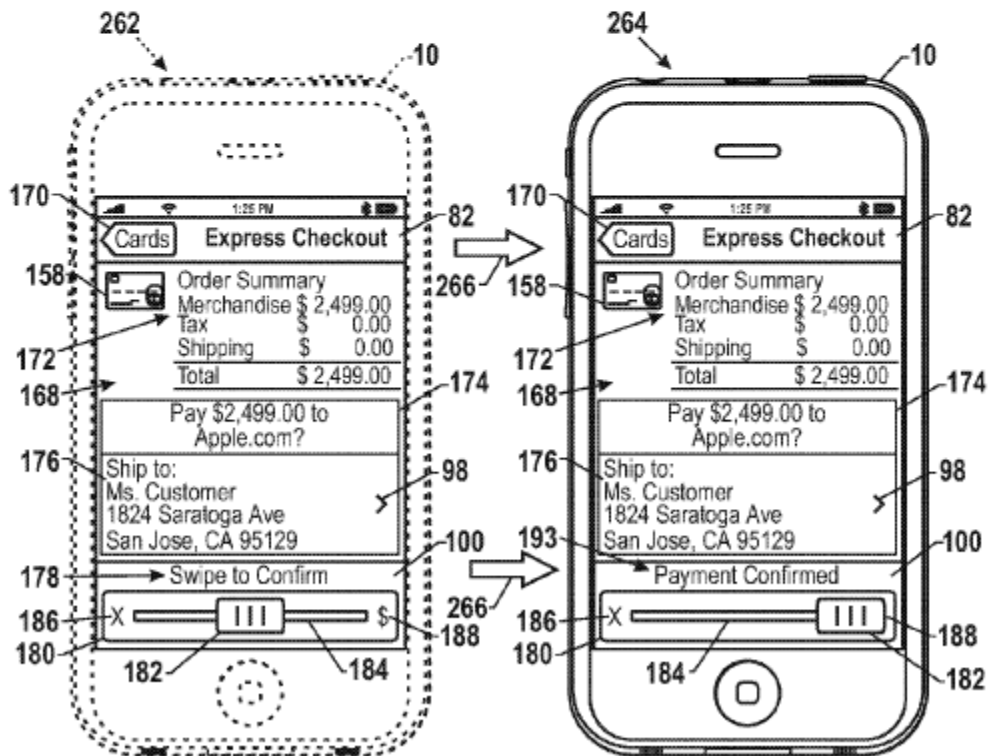


FIG. 12

Id., FIGs. 11, 12.

58. The process of establishing a connection between two devices via a wireless connection through radio transceivers, as in, for example '296 Patent Claim Element [1.8] (and the equivalent Patent Claim Element in claims 15 and 22), is a fundamental concept in wireless communication and networking that a POSITA would have well understood through his education, training, and/or experience, and there would have been a number of books, literature, and academic papers on that point by December 18, 2013.

VIII. Overview of the Prior Art

59. I will now review the prior art upon which I rely to show that the subject matter of the '296 Patent claims would have been well-known and obvious to a POSITA, at least by the '296 Patent's earliest claimed priority date of December 18, 2013, and certainly by the '296 patent's actual filing date of January 12, 2021.

A. U.S. Patent No. 10,210,501 to Low (EX1003)

60. U.S. Patent No. 10,210,510 ("Low"), titled "Electronic Payments to Non-Internet Connected Devices Systems and Methods, to Gak Wee Low et al., was filed on July 25, 2013 and issued as U.S. Patent No. 10,210,510 on February 19, 2019. I understand that Low claimed priority to Provisional U.S. Patent Application Serial No. 61/675,694, which was filed on July 25, 2012. I have been asked to assume that Low qualifies as prior art for purposes of this analysis.

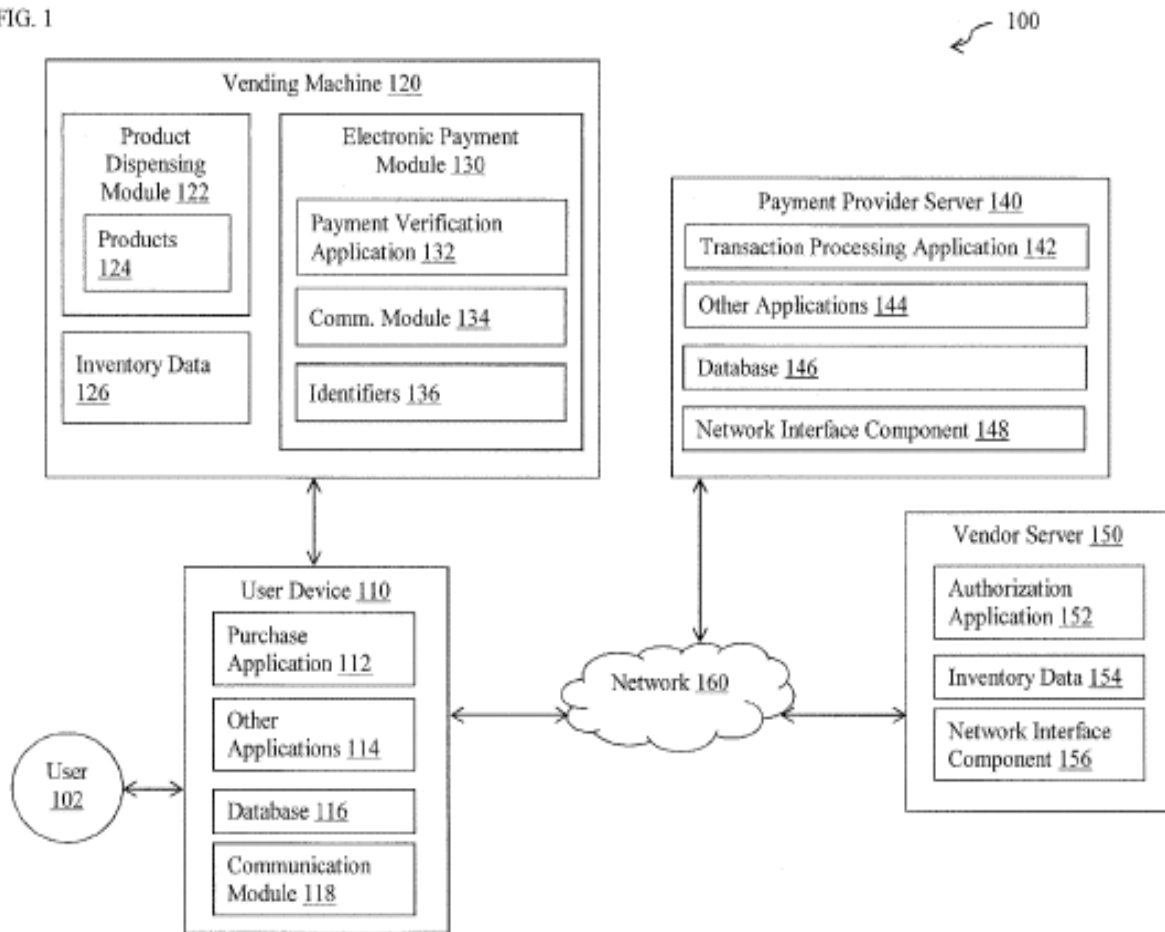
61. Low is directed to systems and methods for facilitating wireless electronic payments between a mobile device and a non-Internet connected machine (“NICM”), including vending machines. EX1003, Abstract, FIG. 1. Low describes that “[i]n addition to traditional online purchases/payments[,] and more recently to payments made through smartphones, Internet-enabled unmanned devices, such as vending machines and kiosks, allow a consumer to make an electronic purchase,” *Id.*, 1:29-33 and “eliminate[] the need for a consumer to carry cash and/or small bills in order to make a purchase from an unmanned machine.” *Id.*, 1:37-39. The problem with such devices, according to Low, is that, “as with other electronic payment methods, when the unmanned machine does not have or loses Internet connection, the electronic payment option may not be available for the consumer.” *Id.* 1:40-43. As such, Low discusses that “complications may lead to lost sales for a merchant and inconvenience for the consumer.” *Id.* 1:46-47.

62. Low discloses a solution that allows consumers to use their smartphones or computing tablets to communicate with a NICM via a wireless communication, such as Bluetooth or NFC (Near Field Communication), and make an electronic payment to the NICM utilizing a payment provider. *Id.*, 2:11-16. Low’s solution includes, among other things, a method, a mobile device, and a computer readable medium having one or more programs for presenting representations of payment accepting unit events. Low discloses transmitting

information corresponding to at least one item for sale at the NICM, receiving a purchase request from the user's device for the at least one item from the NICM, and communicating, using a hardware processor of a payment provider server, an approval of the purchase request to the user device, wherein the user device is configured to transmit a purchase authorization to the NICM using a wireless connection. EX1003, Abstract. The authorizing authority receives the payment and transaction information, authorizes or declines the payment of the transaction, and forwards the authorization or declination to the mobile application. *Id.* The mobile application then sends the authorization or declination to the unattended retail device. If authorized, the unattended retail device provides the retail good or service. *Id.*

63. In FIG. 1 (below), Low shows an exemplary embodiment of a networked system. For example, Low discloses that the user device 110 in FIG. 1 may be a "smart phone, PDA, or an IPAD, among others." *Id.*, 3:37-48.

FIG. 1



Id., FIG. 1.

64. A POSITA would have understood that any of the conventional communication protocols described in the '296 Patent could have been used for any communication disclosed in Low. A POSITA would have also understood that any displayable information in a communication from the vending machine 120 to the user device 110 in FIG. 1 would have been displayed on the user interface of the purchase application 112. To the extent that these features are not inherently disclosed, they would have been obvious to a POSITA. A POSITA, having

common knowledge of the conventional communication protocols and mobile device graphical user interfaces (or GUIs) like those described in the '296 Patent, would have been motivated to use one or more conventional communication protocols to perform any communications among the components of the system and method of Low, including between the user device and electronic payment module of the NICM, and the conventional GUIs to display any displayable information received by the user device. A POSITA would have recognized that such modifications would have allowed for more flexible and effective communication and interaction by the consumer with the NICM. Such modifications would have been standard design choices at the time of the alleged invention, merely requiring the use of well-known elements in well-understood and conventional ways, and a POSITA would have had a reasonable expectation of success to achieve predictable results.

B. U.S. Patent No. 9,898,884 to Arora (EX1004)

65. U.S. Patent No. 9,898,884 (“Arora”), titled “Method and System of Personal Vending,” to Mandeep Arora et al., was filed on April 4, 2013 and issued as U.S. Patent No. 9,898,884 on February 20, 2018. I have been asked to assume that Arora qualifies as prior art for purposes of this analysis.

66. Arora discloses a “system and method for vending products to a customer that encompasses a group of vending machines managed by a vending

company... and the use of a personal electronic device by the customer.” EX1004, Abstract. Arora discloses a mobile device system for communicating with a vending machine over local or remote wireless technologies. *Id.*, 4:2-7. Arora discloses that the mobile device utilizes either local (Bluetooth, WiFi) or cellular wireless technology to detect proximity to a local machine and initiate communications. *Id.*, 4:15-22, 4:40-44, 12:34-13:7, 18:21-28. “Embodiments include the customer selecting either products or vending machines from a list of options provided via the user interface of the personal electronic device, wherein the list of options depends on the actual available inventory on vending machines co-located with customer, and the customer purchase history.” *Id.*, Abstract. Arora also discloses the use of transaction distances, including “identification distances,” to facilitate the transaction. *Id.*, 12:37-13:5, 18:38-48.

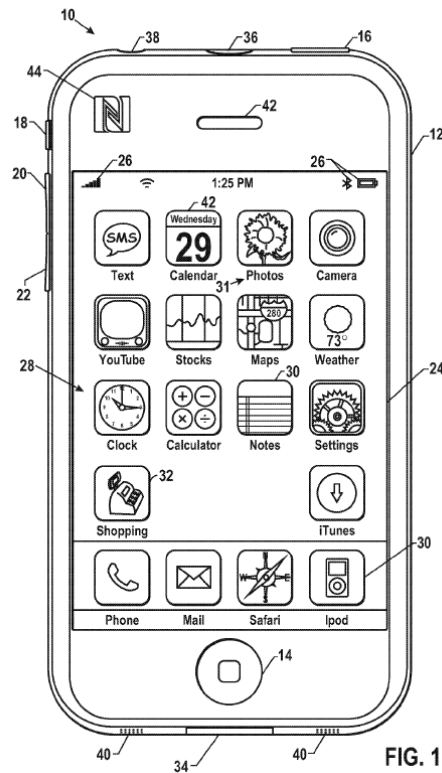
67. The system of Arora enables users to utilize the described graphical application on their mobile devices, which receive communications and confirmations related to purchases. *Id.*, 18:44-55. Arora discloses that the vending units and mobile devices can communicate over different wireless protocols. *Id.*, 3:64-4:7, 27:52-28:3. Arora also discloses a graphical interface on the mobile device for communicating with the vending unit. *Id.*, 4:40-59; FIGs. 3, 7. A POSITA would have understood that they could use any disclosed communications

or graphic display features of the mobile application of the mobile device to communicate and display the results of those communications.

C. U.S. Patent No. 8,255,323 to Casey (EX1005)

68. U.S. Patent No. 8,255,323 (“Casey”), titled “Motion based payment confirmation,” to Brandon J. Casey et al., was filed on January 9, 2009 and issued as U.S. Patent No. 8,255,323 on August 28, 2012. I have been asked to assume that Casey qualifies as prior art for purposes of this analysis.

69. I discussed Casey above in the Technology Background Section. Casey describes that it is “directed to techniques for confirming a payment transaction on an electronic device that includes a touchscreen,” EX1005, 3:10-12, such as the GUI shown in FIG.1. *Id.*, Abstract, 1:5-9.



Id., FIG.1.

70. Casey describes that “[t]hrough the touch screen, a user may select a payment instrument, such as a credit card or debit card, for performing a payment transaction.... After selection of a payment instrument, the electronic device may display one or more graphical elements for confirming the payment transaction.... Upon confirmation, the electronic device may transmit transaction and account information, such as a sender and/or recipient identifier, payment instrument identifier, account number, payment amount, remittance advice details (including, but not limited to, line item details, merchant information, date and time, tax details, and shipping costs), device location, shipping location, billing address, and/or

confirmation message, to a merchant or payment recipient to enable processing of the payment transaction.” *Id.*, 3:12-35.

71. For example, “FIG. 5 illustrates a series of screens for confirming a payment transaction.” *Id.*, 12:42-14:36.

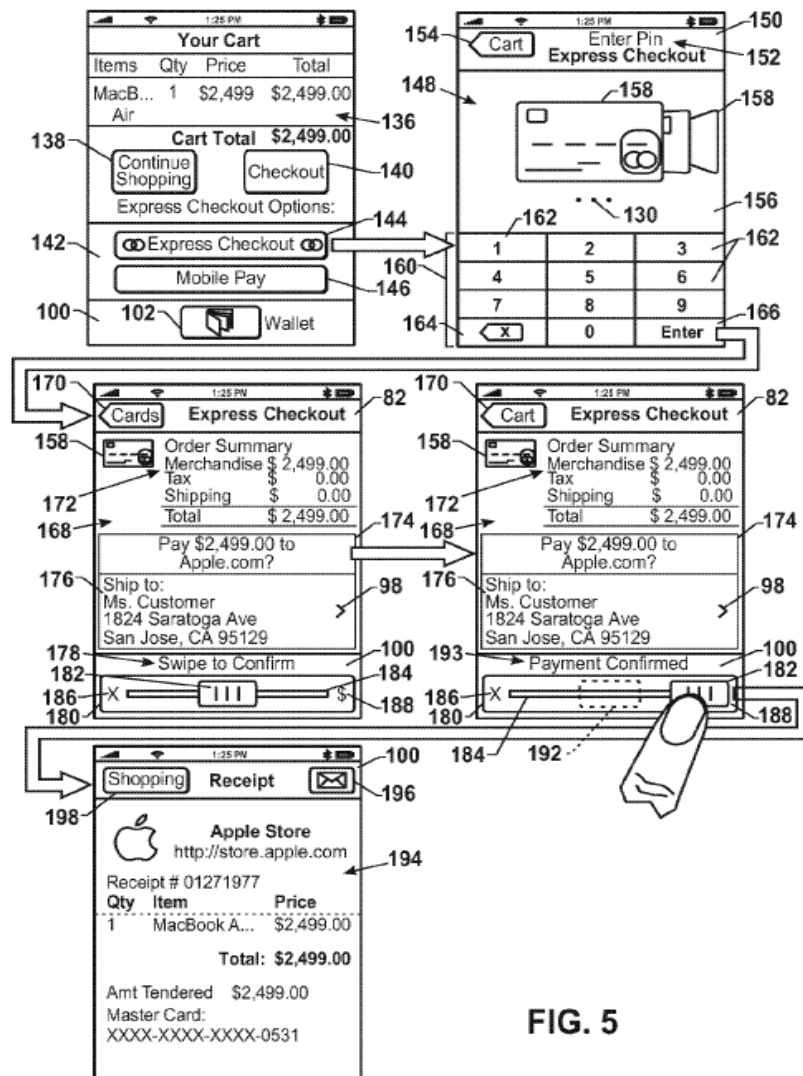


FIG. 5

Id., FIG.5.

72. Casey also discloses that the electronic device “may communicate with other devices using short-range connections, such as Bluetooth and near field

communication.” *Id.*, 3:65-4:1. Casey further discloses that the disclosed electronic device may be an iPod or iPhone, or a derivative thereof. *Id.*, 4:1-3.

73. I understand that when a document such as a patent or application is incorporated by reference in its entirety by a prior art reference, I am to assume that such incorporated reference is part of the prior art reference. In this case, I understand that U.S. Patent Application Publication No. US 2010/0082485 to Gloria Lin *et al.* (EX1006, “Lin”) is to be considered part of the Casey reference.

IX. Subject Matter Eligibility of the Challenged Claims

74. I understand each of the Challenged Claims to be directed to, at a mobile device having one or more processors, a memory, one or output devices (including a display), and one or more radio transceivers, detecting a merchant, facilitating communication, and enabling completion of a purchase from the merchant. I have been asked to opine on whether each of the Challenged Claims, considered both individually and also as an ordered combination, include an inventive concept and whether the claim elements append well-understood, routine, and conventional activities to perform the purchase transaction between the merchant and customer.

75. It is my opinion that each of the claims of the '296 Patent are directed to using well-understood, routine, and conventional wireless technology and graphical user interfaces of a mobile device (such as a smartphone or computer),

operating as such devices operate, according to well-understood, routine, and conventional methodologies to perform the steps of (1) detecting a payment accepting unit, (2) displaying an interface on the mobile application of the mobile device for interacting with the payment accepting unit, (3) connecting with and exchanging information with the payment accepting unit through a wireless connection, and (4) enabling a purchase from the payment accepting unit. For example, the '296 Patent explains that in “general, a mobile device 150 may be a user’s personal mobile device 150,” and include “smart phones, tablet or laptop computers.” *Id.*, 8:57-59, 9:2-7. The '296 Patent, for instance, references the iPhone 5. *Id.*, 20:61. The '296 Patent further describes that the “mobile device 150 (with a mobile application 140 thereon) acts as a communication bridge between the adapter module 100 (associated with payment accepting unit 120) and the server 130.” EX1001, 8:59-62.

76. It is my opinion that each of the Challenged Claims, considered on an element-by-element basis and as an ordered combination, would have been considered by a POSITA to be well-understood, routine, and conventional as of December 18, 2013.

77. As I discussed above, by December 18, 2013, a POSITA was well aware of at least each of the concepts already discussed by Casey (EX1005). In addition, as I discuss later, each of the Challenged Claims would have been obvious

to a POSITA, thus further supporting my opinion that the Challenged Claims were well-understood, routine, and conventional.

78. I will now discuss each of the Challenged Claims, starting with the independent claims. For convenience, I have reproduced below the independent claims of the '296 Patent side-by-side, with the bracketed numbering I will use when referring to those elements:

a. Independent Claims 1, 15, and 22 as a whole.

Claim 1	Claim 15	Claim 22
[1.0] A method of executing payment accepting unit events, comprising: [1.1] at a mobile device with one or more processors, memory, one or more output devices including a display, and one or more radio transceivers: [1.2] detecting one or more payment accepting units in proximity to the mobile device,	[15.0] A mobile device, comprising: [15.1] one or more radio transceivers; one or more output devices including a display; one or more processors; and memory storing one or more programs to be executed by the one or more processors, the one or more programs comprising instructions for: [15.2] detecting one or more payment accepting units in proximity to the mobile device,	[22.0] A non-transitory computer readable storage medium storing one or more programs, [22.1] the one or more programs comprising instructions, which, when executed by a mobile device with one or more processors, one or more output devices including a display, and one or more radio transceivers, cause the mobile device to perform operations comprising: [22.2] detecting one or more payment accepting units in proximity to the mobile device,

[1.3] including detecting predefined radio transmissions broadcast by the one or more payment accepting units,	[15.3] including detecting predefined radio transmissions broadcast by the one or more payment accepting units,	[22.3] including detecting predefined radio transmissions broadcast by the one or more payment accepting units,
[1.4] wherein the one or more payment accepting units are payment operated machines that accept payment for dispensing of products and/or services;	[15.4] wherein the one or more payment accepting units are payment operated machines that accept payment for dispensing of products and/or services;	[22.4] wherein the one or more payment accepting units are payment operated machines that accept payment for dispensing of products and/or services;
[1.5] displaying a user interface of a mobile payment application on the display of the mobile device, [1.6] the user interface being configured to display a visual indication of the one or more payment accepting units and	[15.5] displaying a user interface of a mobile payment application on the display of the mobile device, [15.6] the user interface being configured to display a visual indication of the one or more payment accepting units and	[22.5] displaying a user interface of a mobile payment application on the display of the mobile device, [22.6] the user interface being configured to display a visual indication of the one or more payment accepting units and
[1.7.1] accept user input to (i) receive selection by a user of the mobile device of an available payment accepting unit of the one or more payment accepting units and	[15.7.1] accept user input to (i) receive selection by a user of the mobile device of an available payment accepting unit of the one or more payment accepting units and	[22.7.1] accept user input to (i) receive selection by a user of the mobile device of an available payment accepting unit of the one or more payment accepting units and
[1.7.2] (ii) trigger payment by the mobile payment application for a transaction initiated by	[15.7.2] (ii) trigger payment by the mobile payment application for a transaction initiated by	[22.7.2] (ii) trigger payment by the mobile payment application for a transaction initiated by

the user of the mobile device with the available payment accepting unit of the one or more payment accepting units; [1.8] establishing via the one or more radio transceivers a wireless connection between the mobile device and the available payment accepting unit of the one or more payment accepting units; [1.9] after establishing the wireless connection, enabling user interaction with the user interface of the mobile payment application to complete the transaction; [1.10] exchanging information with the available payment accepting unit via the one or more radio transceivers, in conjunction with the transaction; and [1.11] in response to receiving the information, displaying, on the display, an updated user interface of the mobile payment	the user of the mobile device with the available payment accepting unit of the one or more payment accepting units; [15.8] establishing via the one or more radio transceivers a wireless connection between the mobile device and the available payment accepting unit of the one or more payment accepting units; [15.9] after establishing the wireless connection, enabling user interaction with the user interface of the mobile payment application to complete the transaction; [15.10] exchanging information with the available payment accepting unit via the one or more radio transceivers, in conjunction with the transaction; and [15.11] in response to receiving the information, displaying, on the display, an updated user interface of the mobile payment	the user of the mobile device with the available payment accepting unit of the one or more payment accepting units; [22.8] establishing via the one or more radio transceivers a wireless connection between the mobile device and the available payment accepting unit of the one or more payment accepting units; [22.9] after establishing the wireless connection, enabling user interaction with the user interface of the mobile payment application to complete the transaction; [22.10] exchanging information with the available payment accepting unit via the one or more radio transceivers, in conjunction with the transaction; and [22.11] in response to receiving the information, displaying, on the display, an updated user interface of the mobile payment
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application to the user of the mobile device.	application to the user of the mobile device.	application to the user of the mobile device.
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79. In my opinion, each of Claims 1, 15, and 22, each taken as a whole would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

80. Each of independent Claims 1, 15, and 22 are performed on a generic, conventional mobile device such as a smartphone, which the '296 Patent describes includes an iPhone 5. EX1001, 20:61. By December 18, 2013, a POSITA would have understood that such a mobile device would have at least included all of the features that Casey (EX1005) describes with respect to its device. *See* Section VII above. For brevity, I do not repeat that Section VII here again, but assume that the reader has already read that section.

81. None of Claims 1, 15, or 22 recite any feature, element, or component that was not well-understood, routine or conventional, or that was not included in readily available off-the-shelf mobile devices such as the iPhone 5, for example. Taking each of the claimed steps of [1.2]-[1.11], [15.2]-[15.11], and [22.2]-[22.11] individually and as a whole, these steps (individually and together) describe activities that would have been well-understood, conventional, and routine. A POSITA would have understood well that taking the conventional mobile device in 2013, or earlier, which would have included a mobile application, and performing

the general steps of “detecting” some information or data type or device, “displaying” some information or data type on the user interface of the mobile application on the mobile device, accepting user input via the user interface of the mobile device, and processing and incorporating that user input, and then generally communicating between the mobile device and one or more other devices throughout the process using the already existing transceivers via a wireless connection, were well-understood, routine, and conventional. In my opinion, none of Claims 1, 15, and 22, read as a whole, convey to a POSITA any activities that were not already well-understood, routine, and conventional as of December 18, 2013.

82. Looking at each of the steps of the Claims 1, 15, and 22, individually, it is my opinion that a POSITA would have found each of those steps to be well-understood, routine, and conventional.

b. Claim Elements [1.0]-[1.1], [15.0]-[15.1], and [22.0]-[22.1]

Claim 1	Claim 15	Claim 22
[1.0] A method of executing payment accepting unit events, comprising:	[15.0] A mobile device, comprising:	[22.0] A non-transitory computer readable storage medium storing one or more programs,
[1.1] at a mobile device with one or more processors, memory, one or more output devices including a display, and	[15.1] one or more radio transceivers; one or more output devices including a display; one or more processors; and memory	[22.1] the one or more programs comprising instructions, which, when executed by a mobile device with one

one or more radio transceivers:	storing one or more programs to be executed by the one or more processors, the one or more programs comprising instructions for:	or more processors, one or more output devices including a display, and one or more radio transceivers, cause the mobile device to perform operations comprising:
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83. In my opinion, each of Claim Elements [1.0]-[1.1], [15.0]-[15.1], and [22.0]-[22.1] would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

84. Claim Element [1.0] describes a “method of executing payment accepting unit events, comprising....” I understand that this portion of the claim is called the “preamble,” and that the preamble usually states a purpose or intended use for an invention. Claim Element [1.1] cites to a mobile device and components that would have been necessary for operation of, and found in a conventional mobile device—a processor, memory, and one or more output devices including a display, and one or more radio transceivers. Claim Elements [15.1] and [22.1] also cite to these components. These were necessary and conventional components of a mobile device, including every smartphone that was available prior to December 18, 2013. *See* Section X below, at Ground 2, Elements [1.0]-[1.1], [15.0]-[15.1], and [22.0]-[22.1].

85. Similarly, the memory recited in Claim Element [15.1] was a well-understood, conventional, and necessary component of every mobile device in the prior art and well-understood, routine, and conventional to a POSITA. It was well-understood that the memory was necessary for storing one or more programs to be executed by the one or more processors, also a necessary component for any mobile device such as a smartphone to operate. *See* Section X below, at Ground 2, Elements [1.0]-[1.1], [15.0]-[15.1], and [22.0]-[22.1].

86. Claim Element [22.0] adds a “non-transitory computer readable storage medium storing one or more programs,” which would have been well-understood by a POSITA to be necessary for a mobile device such as a smartphone to operate, which would have included Claim Element [22.1]. The purpose of storage on a mobile device was well-known to include storage of one or more programs to be executed by a mobile device’s processors. There is nothing that would not have been well-understood, conventional, or routine to a POSITA in Claim Elements [22.0]-[22.1].

c. Claim Elements [1.2], [15.2], [22.2]

Claim 1	Claim 15	Claim 22
[1.2] detecting one or more payment accepting units in proximity to the mobile device,	[15.2] detecting one or more payment accepting units in proximity to the mobile device	[22.2] detecting one or more payment accepting units in proximity to the mobile device,

87. In my opinion, each of Claim Elements [1.2], [15.2], and [22.2] would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

88. Claim Elements [1.2], [15.2], and [22.2] specify that the mobile device detects “one or more payment accepting units in proximity to the mobile device.”

89. A POSITA would have understood such “detecting” to be no more than using the conventional mobile device’s then-existing and included standard processors, memory, and transceivers (among other elements) to perform this step, and such step would have been well-understood and conventional, particularly as mobile devices such as a smartphone performed this step routinely using communication protocols such as cellular, WiFi, or Bluetooth, as would have been understood by a POSITA.

90. The ’296 Patent recognizes such standardized usage when it describes components of its system. For example, the ’296 Patent indicates the iPhone 5 could be used for the mobile device. EX1001, 20:61. The ’296 Patent at 9:36-

10:13 also describes well-known communication protocols that a POSITA would have been recognized to be well-understood, routine and conventional:

Network Connections: For purposes of this discussion, a persistent network connection is a wired or wireless communications connection that is ongoing (e.g., a dedicated connection, a dedicated online connection, and/or a hardwired connection) or accessible on demand (e.g., the ability for the machine to make a temporary connection to a server or the ability for the user to contact a server from his mobile device). **Typically the persistent network connection has been conducted over “long-range communication technology” or “long-range communication protocol” (e.g., hardwired, telephone network technology, cellular technology (e.g., GSM, CDMA, or the like), Wi-Fi technology, wide area network (WAN), local area network (LAN), or any wired or wireless communication technology over the Internet that is known or yet to be discovered)...Communications between user mobile devices 150 and the adapter module 100 of the payment accepting unit 120 take place using “short-range communication technology” or “short-range communication protocol” (e.g., Bluetooth (such as Bluetooth 4.0, Bluetooth Smart, Bluetooth Low Energy (BLE)), near-field communication (NFC), Ultra**

Wideband (UWB), radio frequency identification (RFID), infrared wireless, induction wireless, or any wired or wireless technology that could be used to communicate a small distance (approximately a hundred feet or closer) that is known or yet to be discovered)... The communications technology shown in the figures may be replaced with alternative like communications technology and, therefore, specific shown communications technologies are not meant to be limiting. For example, Wi-Fi technology could be replaced with another long-range communication technology.

Id. 9:36-10:13 (bolded for emphasis).

91. A POSITA would have understood that a long-range communication protocol (for example, GSM, CDMA, or the like) or a short-range communication protocol (for example, Bluetooth, NFC, or the like) could be used with a conventional mobile device to “detect” a nearby device that communicated on the same protocol. A POSITA would have understood that as part of such protocol, certain information types are necessarily shared for the devices to be able communicate. It would have been routine, conventional, and well-understood to a POSITA to use then existing short-range or long-range communication protocol capabilities already included in mobile devices such as smartphones to detect such devices as point-of-sale devices and electronic payment devices with which to

communicate. Such detecting step was well-understood, routine, and conventional as of December 18, 2013, and this Claim Element adds nothing more to this step than using the existing, conventional, well-understood, and routine short-range communication protocol.

d. Claim Elements [1.3], [15.3], [22.3]

Claim 1	Claim 15	Claim 22
[1.3] including detecting predefined radio transmissions broadcast by the one or more payment accepting units,	[15.3] including detecting predefined radio transmissions broadcast by the one or more payment accepting units,	[22.3] including detecting predefined radio transmissions broadcast by the one or more payment accepting units,

92. In my opinion, each of Claim Elements [1.3], [15.3], and [22.3] would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

93. As discussed above with respect to Claim Elements [1.2], [15.2], and [22.2], a POSITA would have understood, for example, that the “detecting” by the mobile device could be through a short- or long-range wireless communication (as opposed to wired), where the communicating devices necessarily must first detect each other based on predefined radio transmission broadcasts exchanged by each device within the applicable frequency range(s) of the electromagnetic spectrum. A POSITA would have understood that for devices that have the ability to

communicate wirelessly, such devices necessarily broadcast, via the devices' transceivers, predefined radio transmissions that are detectable by other devices capable of communicating with the device.

94. Claim Elements [1.3], [15.3], and [22.3] merely specify that the step of “detecting” includes “detecting predefined radio transmissions,” which a POSITA would have understood to have been necessary for any communication to occur between two wireless devices at the time of the alleged invention. A POSITA would have understood wireless devices equipped with short- or long-range communication protocols, such as smartphones and point-of-sale devices, routinely broadcast “predefined radio transmissions” that were used by other similarly equipped devices to detect each other and communicate wirelessly, as was well-understood, routine, and conventional as of December 18, 2013. These Claim Elements add nothing more to this step.

e. Claim Elements [1.4], [15.4], [22.4]

Claim 1	Claim 15	Claim 22
[1.4] wherein the one or more payment accepting units are payment operated machines that accept payment for dispensing of products and/or services;	[15.4] wherein the one or more payment accepting units are payment operated machines that accept payment for dispensing of products and/or services;	[22.4] wherein the one or more payment accepting units are payment operated machines that accept payment for dispensing of products and/or services;

95. In my opinion, each of Claim Elements [1.4], [15.4], and [22.4] would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

96. These Claim Elements add nothing more than to specify that the payment accepting units are generic and, in view of the '296 Patent specification, conventional "payment operated machines that accept payment for dispensing of products and/or service." For example, the '296 Patent informs that the "[p]ayment accepting units 120 may be vending machines, parking meters, toll booths, laundromat washers and dryers, arcade games, kiosks, photo booths, toll booths, transit ticket dispensing machines, and other known or yet to be discovered payment accepting units 120," all of which were well-known, routine, and conventional at the time of the alleged invention. EX1001, 9:27-31. Nothing about this is inventive as of December 18, 2013, and this Claim Element adds nothing more.

f. Claim Elements [1.5], [15.5], [22.5]

Claim 1	Claim 15	Claim 22
[1.5] displaying a user interface of a mobile payment application on the display of the mobile device,	[15.5] displaying a user interface of a mobile payment application on the display of the mobile device,	[22.5] displaying a user interface of a mobile payment application on the display of the mobile device,

97. In my opinion, each of Claim Elements [1.5], [15.5], and [22.5] would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

98. These Claim Elements describe the generic step of displaying the user interface of an application on the mobile device—that is, a GUI as would have been commonly referred to by a POSITA. Just about every, if not every, application on a smartphone would have included this feature, and routinely displayed a GUI on the application of the mobile device. For example, devices such as the iPhone 5, which the '296 Patent indicates could be used for the mobile device, would have included this Claim Element. Casey (EX1005), at each of Figures 1, 4-7, 8, 10-13 demonstrate this step as well. Such display step was well-understood, routine, and conventional as of December 18, 2013, and this Claim Element adds nothing more to this step.

g. Claim Elements [1.6], [15.6], [22.6]

Claim 1	Claim 15	Claim 22
[1.6] the user interface being configured to display a visual indication of the one or more payment accepting units and	[15.6] the user interface being configured to display a visual indication of the one or more payment accepting units and	[22.6] the user interface being configured to display a visual indication of the one or more payment accepting units and

99. In my opinion, each of Claim Elements [1.6], [15.6], and [22.6] would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

100. These Claim Elements describe the generic step of configuring the user interface of the mobile application on the mobile device to display certain visual information and adds nothing more. A POSITA would have found this step to be well-understood, routine, and conventional, and that the information being displayed is a “visual indication of the one or more payment accepting units” does not affect my opinion. A POSITA would have understood that a GUI of a mobile application on a device would have been customizable and configurable to display any text, number, icon, or other visual information. Since the user interface of the mobile application conveys information via visual means (as opposed to, for example, auditory means), having a “visual indication” was well-understood, routine, and conventional. Configuring the mobile application to include a visual indication of the one or more payment accepting units would have been well-understood, routine, and conventional as of December 18, 2013, and this Claim Element adds nothing more to this step.

h. Claim Elements [1.7.1], [15.7.1], [22.7.1]

Claim 1	Claim 15	Claim 22
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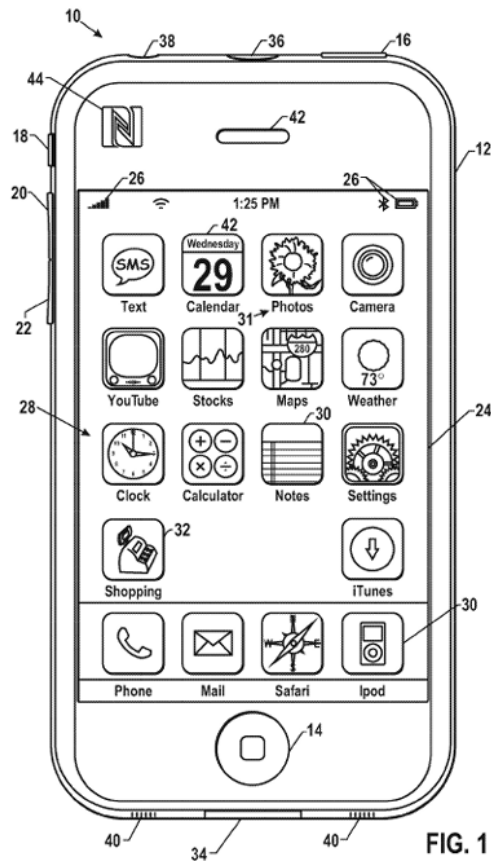
[1.7.1] accept user input to (i) receive selection by a user of the mobile device of an available payment accepting unit of the one or more payment accepting units and	[15.7.1] accept user input to (i) receive selection by a user of the mobile device of an available payment accepting unit of the one or more payment accepting units and	[22.7.1] accept user input to (i) receive selection by a user of the mobile device of an available payment accepting unit of the one or more payment accepting units and
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101. In my opinion, each of Claim Elements [1.7.1], [15.7.1], and [22.7.1] would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

102. These Claim Elements describe the generic step of accepting user input to receive information and adds nothing more. A POSITA would have found this step to be well-understood, routine, and conventional, and that the information being received is a selection of an available payment accepting unit does not affect my opinion.

103. A POSITA would have understood that the user interface of a mobile application on a mobile device, which already included a touchscreen by this time (EX1005, Abstract (“...For example, a user may drag the graphical element to a confirmation position via a touch screen of the electronic device...”)), could accept user input. One function of the user interface of a mobile application of smartphones was to interact with users and display information. For example, Casey shows the display of a mobile device that has various icons, each of which a

POSITA would have understood could accept user input to perform some predefined process:



EX1005, FIG. 1. Arora also discloses at, for example Figure 3, a user interface showing vending machines for selection by a user. EX1004, FIG. 3.

104. Accepting user input of some information type by a mobile application of a mobile device would have been well-understood, routine, and conventional as of December 18, 2013, and this Claim Element adds nothing more to this step.

i. Claim Elements [1.7.2], [15.7.2], [22.7.2]

Claim 1	Claim 15	Claim 22
[1.7.2] (ii) trigger payment by the mobile payment application for a transaction initiated by the user of the mobile device with the available payment accepting unit of the one or more payment accepting units;	[15.7.2] (ii) trigger payment by the mobile payment application for a transaction initiated by the user of the mobile device with the available payment accepting unit of the one or more payment accepting units;	[22.7.2] (ii) trigger payment by the mobile payment application for a transaction initiated by the user of the mobile device with the available payment accepting unit of the one or more payment accepting units;

105. In my opinion, each of Claim Elements [1.7.2], [15.7.2], and [22.7.2] would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

106. These Claim Elements describe the generic step of having the previous input from the user tied to some additional step of a process being implemented within a mobile application of a mobile device and adds nothing more. A POSITA would have found this step to be well-understood, routine, and conventional. Casey describes a very similar process: “FIG. 5 illustrates a series of screens for confirming a payment transaction. As discussed above with respect to FIG. 4, the order summary screen 136 includes the graphical elements 140, 144, 146, and 142 for initiating a payment transaction. In response to selection of one of these graphical elements, the device may display....” EX1005, 12:43-47. These Claim Elements add nothing more than this generic, conventional step, and to the extent it is argued that the additional step of “a transaction initiated by the user of the mobile

device with the available payment accepting unit of the one or more payment accepting units” would not have been well-understood, routine, or conventional, I disagree. A POSITA would have understood that the transaction is with the user of the mobile device, and that a transaction would occur with the selected available payment accepting unit, rather than, for example, a different user or a different payment accepting unit.

j. Claim Elements [1.8], [15.8], [22.8]

Claim 1	Claim 15	Claim 22
[1.8] establishing via the one or more radio transceivers a wireless connection between the mobile device and the available payment accepting unit of the one or more payment accepting units;	[15.8] establishing via the one or more radio transceivers a wireless connection between the mobile device and the available payment accepting unit of the one or more payment accepting units;	[22.8] establishing via the one or more radio transceivers a wireless connection between the mobile device and the available payment accepting unit of the one or more payment accepting units;

107. In my opinion, each of Claim Elements [1.8], [15.8], and [22.8] would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

108. These Claim Elements describe the generic step of establishing a connection between two well-understood, routine, conventional devices, one of which is the mobile device using an existing transceiver of the mobile device. Whether one of the devices is a payment accepting unit as opposed to another device

that has the ability to communicate with the mobile device would not change that outcome. This Claim Element adds no other features or step. A POSITA would have found these Claim Elements to be well-understood, routine and conventional.

k. Claim Elements [1.9], [15.9], [22.9]

Claim 1	Claim 15	Claim 22
[1.9] after establishing the wireless connection, enabling user interaction with the user interface of the mobile payment application to complete the transaction;	[15.9] after establishing the wireless connection, enabling user interaction with the user interface of the mobile payment application to complete the transaction;	[22.9] after establishing the wireless connection, enabling user interaction with the user interface of the mobile payment application to complete the transaction;

109. In my opinion, each of Claim Elements [1.9], [15.9], and [22.9] would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

110. These Claim Elements describe the generic step of enabling user interaction with the user interface of the mobile application of the mobile device, to enable completion of a transaction after the mobile device and the payment accepting unit have established a wireless connection via existing transceivers of both devices. As discussed above with respect to Claim Element [1.7.1-2], [15.7.1-2], and [22.7.1-2], accepting user input as part of a payment transaction being conducted on a mobile payment application of a mobile device was well-

understood, routine, and conventional as of December 18, 2013. Completing the transaction as part of this mobile payment application was also well-understood, routine, and conventional. *See generally* Casey (EX1005), and *id.* at 10:47-51: “[a]fter the payment transaction has been confirmed, the device 10 may receive and display (block 78) a receipt for the payment transaction. For example, the receipt may identify the amount tendered, the payment recipient, and the payment instrument used to complete the payment transaction.” These Claim Elements add nothing more than this generic step.

I. Claim Elements [1.10], [15.10], [22.10]

Claim 1	Claim 15	Claim 22
[1.10] exchanging information with the available payment accepting unit via the one or more radio transceivers, in conjunction with the transaction; and	[15.10] exchanging information with the available payment accepting unit via the one or more radio transceivers, in conjunction with the transaction; and	[22.10] exchanging information with the available payment accepting unit via the one or more radio transceivers, in conjunction with the transaction; and

111. In my opinion, each of Claim Elements [1.10], [15.10], and [22.10] would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

112. These Claim Elements describe the generic step of exchanging information via the radio transceivers of the mobile device and the payment

accepting unit in conjunction with the transaction, and add nothing more. Exchanging information between two devices, whether the exchange happens over a short-range or a long-range wireless connection (or any combination thereof), was well-understood, routine, and conventional, and a POSITA would have understood that radio transceivers found in, for example, the iPhone 5 can be used to exchange information. The term “transceiver” is a combination of the words “transmitter” and “receiver,” so such understanding would have been well-understood. This claim adds nothing more than this generic step.

m. Claim Elements [1.11], [15.11], [22.11]

Claim 1	Claim 15	Claim 22
[1.11] in response to receiving the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device.	[15.11] in response to receiving the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device.	[22.11] in response to receiving the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device

113. In my opinion, each of Claim Elements [1.11], [15.11], and [22.11] would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

114. These Claim Elements describe the generic step of updating the user

interface of the mobile application in response to receiving certain information from another device via the radio transceiver of the other device in conjunction with the transaction, and add nothing more. Such step was well-understood, routine, and conventional, and Casey (EX1005) shows several examples in which this step is being performed, including at Figures 3 and 10. These Claim Elements add nothing more than this generic step.

n. Claims 2 and 23

Claim 2	Claim 23
The method of claim 1, wherein the updated user interface of the mobile payment application includes at least one of: a message displayed on the display of the mobile device; a banner notification displayed on a display of the mobile device; and/or a visual alert from one or more LEDs of the mobile device.	The non-transitory computer readable storage medium of claim 22, wherein the updated user interface of the mobile payment application includes at least one of: a message displayed on the display of the mobile device; a banner notification displayed on a display of the mobile device; and/or a visual alert from one or more LEDs of the mobile device.

115. In my opinion, the additional claim elements recited in claims 2 and 23 would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

116. Claims 2 and 23 generally specify different ways in which information would have been displayed on the user interface of the mobile payment application,

but do not otherwise add any other step. A “message,” a “banner,” or other “visual alert from one or more of the LEDs of the mobile device” were all well-understood, routine and conventional ways in which to display information, adding nothing more.

117. Even considering each of claims 2 and 23 as a whole (including the recitations in claims 1 and 22, respectively), these claims add nothing that would not have been well-understood, conventional, or routine, as these claims simply state conventional ways to display or present information.

o. Claims 3 and 24

Claim 3	Claim 24
The method of claim 1, wherein the information indicates completion of the transaction between the user of the mobile device and the available payment accepting unit.	The non-transitory computer readable storage medium of claim 22, wherein the information indicates completion of the transaction between the user of the mobile device and the available payment accepting unit.

118. In my opinion, the additional element recited in claims 3 and 24 would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

119. Claims 3 and 24 generally specify a particular type of information, and a POSITA would have understood that information can come in a variety of data types and information. Therefore, specifying that the information indicates

completion of the transaction would have been well-understood, routine, and conventional. In fact, Casey (*id.*) at FIGs 3 and 10 describes, for example, information indicating completion of the transaction.

120. Considering each of claims 3 and 24 as a whole (including the recitations in claims 1 and 22, respectively), these claims add nothing that would not have been well-understood, conventional, or routine, as these claims simply state conventional ways to transmit information through conventional components. That the information indicates completion of the transaction between the user of the mobile device and the available payment accepting unit does not change my opinion.

p. Claim 4

Claim 4

The method of claim 2, wherein the mobile device includes a long-range transceiver and the information at least includes an amount of the completed transaction, and the method further comprises:

sending at least the amount of the completed transaction to a server via the long-range transceiver.

121. In my opinion, the additional elements recited in claim 4 would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

122. Claim 4 generally specifies (1) that the mobile device includes a long-range transceiver, (2) a description of the information, and (3) sending such information to a server via the long-range transceiver. Components such as a long-range transceiver, a server, and the ability of a mobile device to communicate with and exchange information, including to send information to the server, were well-known, routine, and conventional. The '296 Patent acknowledges this when discussing these concepts:

- Typically the persistent network connection has been conducted over “long-range communication technology” or “long-range communication protocol” (e.g., hardwired, telephone network technology, cellular technology (e.g., GSM, CDMA, or the like), Wi-Fi technology, wide area network (WAN),

local area network (LAN), or any wired or wireless communication technology over the Internet that is known or yet to be discovered)....

EX1001, 9:43-56.

- Server: A server is the host processing server that may be operated by the company running the payment processing system... As shown in FIG. 22, the communications unit 970 of the server 130 includes long-range communication capability 972 (e.g., cellular technology and/or Wi-Fi mechanisms)... *Id.*, 10:14-47.

123. Considering claim 4 as a whole (including the recitations in claims 1 and 2), this claim adds nothing that would not have been well-understood, conventional, or routine, as this claim simply states conventional ways to transmit information using conventional components. That the information indicates an amount of the completed transaction does not change my opinion. *See, e.g.*, Casey (EX1005), FIG. 10.

q. Claims 5 and 26

Claim 5	Claim 26
The method of claim 1, wherein the information indicates abortion of the transaction initiated by the user of the mobile device.	The non-transitory computer readable storage medium of claim 22, wherein the information indicates abortion of the transaction initiated by the user of the mobile device.

124. In my opinion, the additional element recited in claims 5 and 26 would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

125. Similar to claims 3 and 24 discussed above, claims 5 and 26 generally specify a type of information, and whether that information indicates abortion of the transaction (as opposed to another type of information otherwise discussed), a POSITA would have found the claimed subject matter to be well-understood, routine, and conventional.

126. Considering each of claims 5 and 26 as a whole, respectively, (including the recitations in claims 1 and 22, respectively), these claims add nothing that would not have been well-understood, conventional, or routine, as these claims simply state conventional ways to transmit information using conventional components. That the information indicates abortion of the transaction initiated by the user of the mobile device does not change my opinion.

r. Claims 6 and 27

Claim 6	Claim 27
The method of claim 1, wherein the information indicates failure of the transaction initiated by the user of the mobile device or a malfunction associated with the available payment accepting unit.	The non-transitory computer readable storage medium of claim 22, wherein the information indicates failure of the transaction initiated by the user of the mobile device or a malfunction associated with the available payment accepting unit.

127. In my opinion, the additional elements recited in claims 6 and 27 would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

128. Similar to claims 3-5, 24, and 26 discussed above, as examples, claims 6 and 27 generally specify a type of information, and whether that information indicates failure of the transaction or a malfunction (as opposed to another type of information otherwise discussed), a POSITA would have found these claims elements to be well-understood, routine, and conventional.

129. Considering each of claims 6 and 27 as a whole, respectively, (including the recitations in claims 1 and 22, respectively), these claims add nothing that would not have been well-understood, conventional, or routine, as the claims simply state conventional ways to transmit information using conventional components. That the information indicates failure of the transaction initiated by the user of the mobile device or a malfunction associated with the available payment accepting unit does not change my opinion.

s. Claim 7

Claim 7

The method of claim 1, wherein the mobile device includes an accelerometer and the method further comprises:

based on data from the accelerometer, determining whether the user is walking away from the available payment accepting unit; and

in accordance with a determination that the user is walking away from the available payment accepting unit, canceling the wireless connection.

130. In my opinion, the additional elements recited in claim 7 would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

131. Claim 7 adds that the mobile device includes an accelerometer, which was already well-understood, routine, and conventional in mobile devices such as smartphones. The ability of the accelerometer to acquire data, send that data to the mobile device CPU, process that data, and then send instructions to the mobile device (or application) to perform a task such as, for example, to cancel a transaction or the wireless connection, when certain conditions are met (for example, when the user exceeds a certain threshold or distance), was well-understood, routine, and conventional.

132. A POSITA would have understood that data, including, but not limited to, motion, velocity, signal strengths, acceleration, rotation, direction, can be captured and input into CPU of the mobile device through various means, including

through, for example, the user interface, camera, audio, or various sensors, including accelerometers. A POSITA would have understood that such data is sent to the CPU and then processed by the CPU. A POSITA would have also understood that after being processed by the CPU, instructions would necessarily be sent to a mobile application or another element of the mobile device to perform an action or task (for example, command the speaker to sound an alarm). Such understanding was well-understood, routine, and conventional.

133. For example, Casey (EX1005) describes that there are various types of motion sensors, including accelerometers. *Id.*, Abstract. Casey further describes that this is a type of input structure can be used as a user input, and that such input structures can be configured to measure motion or acceleration, which can be captured as data to provide to the CPU of the mobile device. *Id.*, 7:59-8:13.

134. Casey describes that the motion data may be used to confirm a payment transaction. *Id.* Casey discloses:

In addition to receiving user input through the input structures 60 and the touch screen 54, **the device 10 may include a motion sensing device 62 for receiving user input. The motion sensing device 62 may be any device configured to measure motion or acceleration, such as an accelerometer or a gyroscope. In one embodiment, the motion sensing device 40 may be a three-axis accelerometer that includes a sensing element and an integrated circuit interface for**

providing the measured acceleration and/or motion data to the CPU 46. The motion sensing device 62 may be configured to sense and measure various types of motion including, but not limited to, velocity, acceleration, rotation, and direction.

Motion data acquired by the motion sensing device 62 may be used to confirm a payment transaction. As discussed further below, the motion sensing device 62 may be configured to sense motion of the device 10 and transmit motion data to the CPU 46 to adjust one or more graphical elements shown on the display 24. For example, a graphical element, such as a slide bar, may be moved across the display 24 in response to sensed motion. In certain embodiments, the position of the graphical element may be used to confirm or decline a payment transaction.

EX1005, 7:59-8:13.

135. Considering claim 7 as a whole (including the recitations in claim 1), this claim adds nothing that would not have been well-understood, conventional, or routine, as this claim simply states conventional ways to receive and process information.

t. Claim 8

Claim 8
The method of claim 1, wherein the information reflects a status of the transaction for a product stocked by the available payment accepting unit.

136. In my opinion, the additional element recited in claim 8 would have

been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

137. Similar to claims 3-5, 24, and 26 discussed above, as examples, claim 8 generally specifies a type of information, and whether that information indicates a status of the transaction for a product stocked by the available payment accepting unit (as opposed to another type of information otherwise discussed), a POSITA would have found this claim element to be well-understood, routine, and conventional.

138. Considering claim 8 as a whole (including the recitations in claim 1), this claim adds nothing that would not have been well-understood, conventional, or routine, as this claim simply states conventional ways to transmit information using conventional components. That the information reflects a status of the transaction for a product stocked by the available payment accepting unit does not change my opinion.

u. Claim 9

Claim 9
The method of claim 1, further comprising: in addition to exchanging the information, receiving, via the one or more radio transceivers, a coupon that is targeted to the user of the mobile device based on the transaction.

139. In my opinion, the additional element recited in claim 9 would have

been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

140. Similar to claims 3-5, 24, and 26 above, as examples, this claim generally specifies a type of information that is being conveyed to the mobile device, and whether that information is a coupon (as opposed to another type of information otherwise discussed), a POSITA would have found this claim element to be well-understood, routine, and conventional. Further, in electronic payment systems industry, the concept of coupons, incentives, rewards, and loyalty programs were well-known, for example, as discussed by Arora (EX1004). *See* Section X (Ground 2 and Claim 9).

141. Considering claim 9 as a whole (including the recitations in claim 1), this claim adds nothing that would not have been well-understood, conventional, or routine, as this claim simply states conventional ways to transmit information through conventional components. That the information reflects a coupon that is targeted to the user of the mobile device based on the transaction does not change my opinion.

v. Claim 10

Claim 10
The method of claim 1, wherein the user interface of the mobile payment application presented after establishing via the wireless connection indicates

that the wireless connection has been established with the available payment accepting unit.

142. In my opinion, the additional element recited in claim 10 would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

143. This claim specifies the type of information that is displayed on the user interface of the mobile application of the mobile device. Specifically, the information “indicates that the wireless connection has been established...” A POSITA would have understood that the user interface was a common way to communicate information to a user, and that several different types of information could be communicated to the user via the user interface, including that a wireless connection has been established between two devices. Such concept was well-understood, routine, and conventional, and described, for example, in Casey (EX1005), at FIG. 1 showing a Bluetooth connection on the top-right corner.

144. Considering claim 10 as a whole (including the recitations in claim 1), this claim adds nothing that would not have been well-understood, conventional, or routine, as this claim simply states conventional ways to display the information that is contemplated by this claim.

w. Claim element 11.1

Claim [11.1]
The method of claim 1, wherein the user interface of the mobile payment application presented after establishing via the wireless connection includes:
a visual representation of available payment accepting unit;

145. In my opinion, the additional Claim Element [11.1] would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

146. Claim Element [11.1] merely specifies the type of information that is displayed on the user interface of the mobile application of the mobile device. In this case, the information is “a visual representation of the available payment accepting unit.” I incorporate my analysis above, of claim 10. Arora, EX1004, at FIGS. 3 and 7 also demonstrates that such a visual representation was well-understood by a POSITA.

x. Claim element 11.2

Claim [11.2]
an indication of a prepared balance; and

147. In my opinion, the additional Claim Element 11.2 would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

148. This claim element is directed to the type of information that is displayed on the user interface of the mobile device. In this case, the information is “an indication of a prepared balance.” I incorporate my analysis above, of claim

10 , and Casey (EX1005), at FIG. 5.

y. Claim 11.3

Claim [11.3]
an affordance that when slid, indicates the initiation of the transaction.

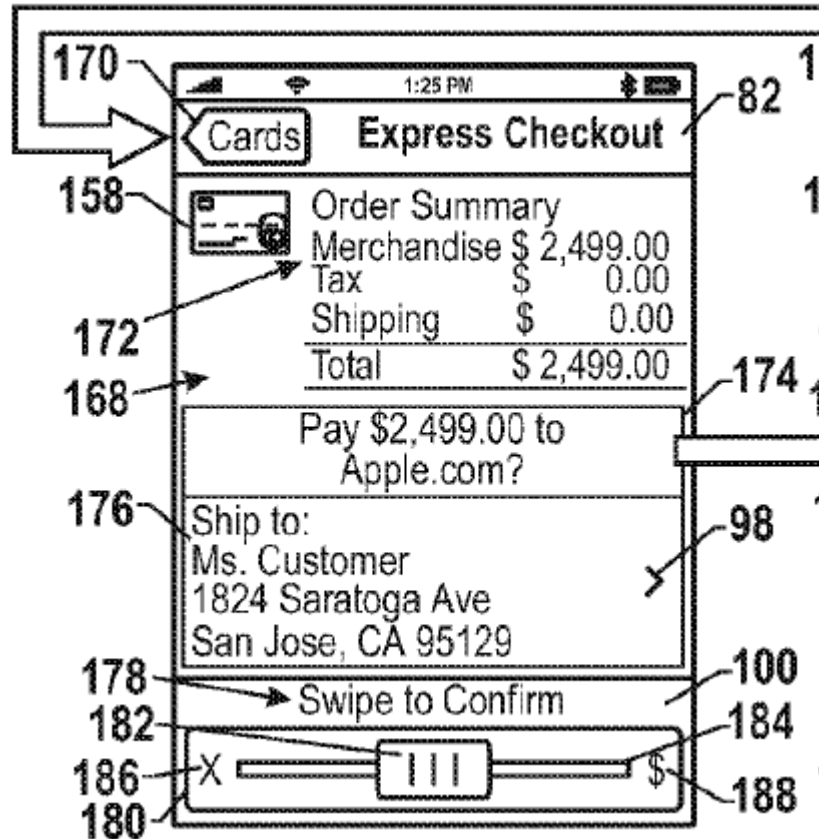
149. In my opinion, Claim Element 11.3 would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

150. This claim element additionally recites “an affordance that when slid, indicates the initiation of the transaction.” I incorporate my analysis above, of claim element 10. Casey (EX1005) at FIG. 5 describes this feature, and such slide or swipe feature after confirming available balance to purchase was well-known to a POSITA, particularly as iPhones were already widely used and described by December 18, 2013. For example, Casey (*id.*) at 14:11-24 states:

The graphical element 182 may move across the confirmation screen 168 when the graphical element 182 is dragged by a user using the touch screen 54. For example, a user may use her finger 190, or another object, to move the graphical element 182 from a center position 192 to the confirmation position 188. In response to, or contemporaneously with, the movement, the device 10 may display a message 193 indicating that the payment has been confirmed. When the graphical element 182 reaches the confirmation position 188, the device 10 may transmit payment information to confirm the payment transaction.

As described above with respect to FIG. 3, the payment information may include a confirmation message, financial account information, an account identifier, a device identifier, or combinations thereof.

Id., 14:11-24;



Excerpt from EX1005, FIG. 5.

151. Considering claim 11 as a whole (including the recitations in claim 1), this claim adds nothing that would not have been well-understood, conventional, or routine, as this claim simply states conventional ways to display the information that is contemplated by this claim and to interact with the user interface of the

mobile device according to well-understood, routine and conventional methodologies.

z. Claim 12

Claim 12
The method of claim 11, wherein the affordance is slid in response to receiving a user input of swipe on the affordance displayed on the display of the mobile device.

152. In my opinion, this claim would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

153. This claim additionally requires “wherein the affordance is slid in response to receiving a user input of swipe on the affordance displayed on the display of the mobile device.” I incorporate my analysis of claims 10 and 11 above, including discussion of Casey (EX1005) at 14:11-24, and Figure 5.

154. Considering claim 12 as a whole (including the recitations to claim 1 and 11), this claim adds nothing that would not have been well-understood, conventional, or routine, as this claim simply states conventional ways to display the information that is contemplated by this claim and to interact with the user interface of the mobile device.

aa.Claim 13

Claim 13
The method of claim 1, wherein the predefined radio transmissions are broadcasted by the one or more payment accepting units indicating status of the one or more payment accepting units.

155. In my opinion, claim 13 would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

156. Similar to claims 3-5, 24, and 26 above, as examples, claim 13 generally specifies a type of information, and whether that information indicates a status of the one or more payment accepting units (as opposed to another type of information otherwise discussed), a POSITA would have found this claim element to be well-understood, routine, and conventional.

157. Considering claim 13 as a whole (including the recitations in claim 1), this claim adds nothing that would not have been well-understood, conventional, or routine, as this claim simply lists a type of status, and does not otherwise recite to any new step.

bb. Claims 14, 21, and 28

Claim 14	Claim 21	Claim 28
The mobile device of claim 13, wherein the one or more payment operated machines includes a laundromat washer or dryer, a vending machine, a parking meter, a toll booth, an arcade game, a kiosk, a photo booth, a toll booth, or a ticket dispensing machine.	The mobile device of claim 15, wherein the one or more payment operated machines include a laundromat washer or dryer, a vending machine, a parking meter, a toll booth, an arcade game, a kiosk, a photo booth, a toll booth, or a ticket dispensing machine.	The non-transitory computer readable storage medium of claim 22, wherein the one or more payment operated machines include a laundromat washer or dryer, a vending machine, a parking meter, a toll booth, an arcade game, a

		kiosk, a photo booth, a toll booth, or a ticket dispensing machine.
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158. In my opinion, the additional elements recited in claims 14, 21, and 28 would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

159. Considering each of claims 14, 21 and 28, respectively, as a whole (including the recitations in claims 1, 15, and 22, respectively), these claims add nothing that would not have been well-understood, conventional, or routine, as these claims, simply list different types of notoriously well-known devices, namely—a laundromat washer or dryer, a vending machine, a parking meter, a toll booth (listed twice), an arcade game, a kiosk, a photo booth, or a ticket dispensing machine. The claims do not otherwise recite any new step or feature. That the identification is to a specific type of payment operated machine does not take this claim outside of what a POSITA would have considered to be well-understood, routine, or conventional.

cc. Claim 16

Claim 16
The mobile device of claim 15, wherein the one or more output devices of the mobile device include at least one of: one or more speakers, one or more light emitting diodes (LEDs), and a vibration mechanism.

160. In my opinion, the additional element recited in claim 16 would have

been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

161. The additional element only recites existing and already well-known components of a conventional smartphone—*i.e.*, one or more speakers, LEDs, and a vibration mechanism.

162. Considering claim 16 as a whole, this claim adds nothing that would not have been well-understood, conventional, or routine, as this claim, simply recites well-understood, routine, and conventional components of a smartphone already existing as of December 18, 2013; for example, as described in Casey (FIG.1 displaying an iPhone).

dd. Claim 17

Claim 17

[17.1] The mobile device of claim 15, **the mobile payment application on the mobile device is configured to communicate with a payment module coupled with an internal interface of the available payment accepting unit;**

[17.2] **the mobile device sends a transmission to the payment module via the one or more radio transceivers of the mobile device in conjunction with the transaction;**

the available payment accepting unit sends the transmission to the payment module in conjunction with the transaction; and

the mobile device obtains, via the one or more radio transceivers, the information from the payment module based on the transmission.

163. In my opinion, the additional elements recited in claim 17 would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

164. Claim Element [17.1] describes a conventional component (a mobile application) of a well-understood, conventional, and routine device (a mobile device) being configured to communicate with another conventional component (a module) coupled with another device (a payment accepting unit). A POSITA would still have that understanding, even if the mobile application is a “mobile payment application” and the module is a “payment module.” A POSITA would have understood that a module may be hardware and/or software.

165. Claim Element [17.2] describes sending and receiving a generic transmission between the components. A POSITA would have understood that such steps were well-understood, routine, and conventional.

166. Considering claim 17 as a whole, this claim adds nothing that would not have been well-understood, conventional, or routine, as it simply describes transmitting generic information between two conventional components (an application within a mobile device and a module within a payment accepting unit) of two conventional devices (a mobile device like an iPhone (EX1004, 20:64) and a payment accepting unit).

ee. Claim 18

Claim 18

The mobile device of claim 15, wherein:

the wireless connection is established via a first transceiver of the one or more transceivers;
--

the information is exchanged via a second transceiver of the one or more transceivers; and

the first transceiver is different from the second transceiver.
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167. In my opinion, the additional elements recited in claim 18 would have been well-understood, routine, and conventional to POSITA as of December 18, 2013.

168. The additional elements of claim 18 simply describe the conventional operations of a mobile device, such as a smartphone, communicating using its transceivers, operating according to well-understood, conventional, and routine methodologies. A POSITA would have understood the commonplace, conventional mobile device to include two different transceivers (which was already well-understood, routine, and conventional), and that one transceiver was useable to establish an unspecified wireless connection and the other transceiver useable to exchange generic information between two devices.

169. Considering claim 18 as a whole, a POSITA would understand this claim to add nothing that would not have been well-understood, conventional, or routine, as it simply describes two well-understood, routine, and conventional concepts (establishing a wireless connection and exchanging information) and

doing so with two conventional devices (a mobile device like an iPhone (EX1004, 20:64) and a payment accepting unit) using already included different transceivers.

ff. Claim 19

Claim 19

The mobile device of claim 15, wherein the one or more payment accepting units further comprise one or more of: parking meters, toll booths, laundromat washers, laundromat dryers, arcade games, kiosks, photo booths, toll booths, and/or transit ticket dispensing machines.

170. In my opinion, the additional element recited in claim 19 would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

171. This additional claim element (and the claim as a whole) is very similar to claims 14, 21 and 28, and adds nothing that would not have been well-understood, conventional, or routine. The additional element simply lists different types of known devices, that is, laundromat washer or dryer, a vending machine, a parking meter, a toll booth (listed twice), an arcade game, a kiosk, a photo booth, or a ticket dispensing machine, and does not otherwise recite to any new step or feature. This does not take this claim outside of what a POSITA would have considered to be well-understood, routine, or conventional.

gg. Claim 20

Claim 20

The mobile device of claim 15, wherein the wireless connection between the mobile device and the available payment accepting unit is a Bluetooth
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connection, a Bluetooth Smart connection, a Bluetooth Low Energy connection, a near-field communication connection, an Ultra Wideband connection, a radio frequency identification connection, an infrared wireless connection, and/or an induction wireless connection.

172. In my opinion, the additional element recited in claim 20 would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

173. This additional claim element (and the claim as a whole) simply describes the wireless connection between the mobile device and the available payment accepting unit by listing different types of well-understood, routine, and conventional wireless communication means, including Bluetooth and NFC, which were well-understood and described in the prior art (see my analysis in Ground 2, Claim Element 1.2 EX1003, 1004, 1005). This claim element does not take this claim outside of what a POSITA would have considered to be well-understood, routine, or conventional.

hh. Claim 25

Claim 25

The non-transitory computer readable storage medium of claim 24, **wherein the information at least includes an amount of the completed transaction, and the instructions further cause the mobile device to send at least the amount of the completed transaction to a server.**

174. In my opinion, the additional elements recited in claim 25 would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

175. The additional elements recited in claim 25 are similar to those recited in claim 4 (and I incorporate my analysis for claims 4 and 24 above by this reference), but additionally include that the instructions further cause the mobile device to send at least the amount of the completed transaction to a server. A POSITA would have understood that a program of a non-transitory computer readable storage medium executed by a mobile device would necessarily have caused the mobile device to perform certain operations, and that such operations can include instructions to send certain types of information through, for example, a transceiver, to a server. In addition, a POSITA would have understood that information can come in various types, and having the information indicate completion of the transaction would have been well-understood, routine, and conventional.

176. Considering claim 25 as a whole (including the recitations in claim 24), this claim adds nothing that would not have been well-understood, conventional, or routine, as this claim simply states conventional ways to use a program executing on a mobile device to transmit information using existing

conventional components. That the information indicates an amount of the completed transaction does not change my opinion.

X. Obviousness of the Challenged Claims in View of the Prior Art

**A. Ground 2: Low in View of Arora and Casey Renders Obvious
Each of Claims 1-28**

**1. Motivation to Modify or Combine Low in view of Arora
and Casey**

177. In my opinion, it would have been obvious to combine or modify Low in view of Arora and Casey to arrive at the subject matter recited in each of claims 1-28 of the '296 Patent.

178. While Low explicitly discloses that, “in some embodiments, multiple machines may send their unique identifiers, such that the user is able to select one or more machines to purchase from” (EX1003, 2:25-28), and that the mobile device 110/410 provides “a selection of a first non-Internet connected machine from the plurality of non-Internet connected machines” (*id.*, 14:22-26), Low does not specify a particular methodology for what happens when the user approaches multiple NICMs at a particular location, such as, for example, two vending machines – one that dispenses soft drinks and the other food products. Accordingly, a POSITA would have been motivated to look to the prior art for a methodology that would allow for selection of one of multiple NICMs at a particular location.

179. In the same field of endeavor as Low, Arora describes a conventional methodology for allowing a user to, via a mobile device, detect and identify one or more vending machines in proximity to the mobile device that are available to accept payment from a mobile payment application executing on the mobile device (EX1004, Abstract, 5:23-30, 7:22-24, 7:62-8:32, 12:41-13:5, 18:21-28, 18:37-47, 24:42-62). Arora describes particular methods for allowing a user, via a mobile device, to detect and identify available NICMs and select one or more vending machines in proximity to the mobile device that are available to accept payment from a mobile payment application executing on the mobile device. *Id.* Accordingly, a POSITA, would have been motivated to modify and/or combine the systems and methods of Low with Arora so as to enable the user device in Low to avoid out-of-service NICMs (EX1004, 24:43-62) and enable the user, via the mobile device, to select a NICM to transact with from only those NICMs that are available to accept payment and complete a transaction at locations with multiple NICMs, or to purchase products from multiple NICMs in a single transaction as taught by Arora (*id.*, 6:50-54, 8:39-56). A POSITA would have been motivated to also combine using any known short- or long-range communication methods to accomplish above tasks or exchange information,

180. Moreover, Low and Arora are each directed to facilitating cashless transactions using mobile devices. Low discloses the purchase application 112 and

GUI application 114 in the user device 110 that may interface with a corresponding module of one or more vending machines 120 and exchange information with a vending machine 120 about a transaction. EX1003, 2:11-28, 4:3-13, 4:24-27. Relatedly, Arora discloses a mobile device system for communicating with a vending machine over local or remote wireless technologies. EX.1004, 2:6-12, 4:2-7. Arora discloses that the mobile device utilizes either local (Bluetooth, WiFi) or cellular wireless technology to detect proximity to a local machine and initiate communications. EX1004, 4:15-22, 4:40-44, 12:34-13:7, 18:21-28. The system of Arora enables users to utilize the described graphical application on their mobile devices to receive communications and confirmations related to purchases, including to serve “as a second, virtual, or replacement ‘front panel’ for one or more physical bending machines.” Ex. 1004, 2:6-12, 18:44-55.

181. A POSITA would have been motivated to combine or modify the system of Low with Arora in order to increase sales and convenience to the user based on Low’s disclosure. EX1003, 1:46-48 (“Thus, complications may lead to lost sales for a merchant and inconvenience for the consumer.”). To that end, a POSITA would have looked to other sources regarding payment systems, including those involving vending machines, such as Arora. Arora states and lists dozens of features and benefits of its invention, including those that go towards the concerns

of Low. EX1004, 2:17-3:53 (reciting, for example, that it facilitates “fast and simple product selection by the customer”).

182. There would have been a reasonable expectation of success in combining the features of Low with Arora, and/or modifying the system or method of Low with the features disclosed or taught by Arora as both were in the same field of endeavor, that is, payment systems between a user device and a vending machine, both contemplated use of a mobile payment application using smartphone such as the iPhone, and Low, as modified in view of Arora, would be able to operate in environments having multiple collocated vending machines. In addition, a POSITA would have understood that such modifications were routine and predictable, particularly given the then-existing communication modalities, including WiFi, Bluetooth, Cellular, and NFC, among others.

183. Given Arora’s disclosures of its user interface, which allows, for example, a user to select a vending machine or product from multiple displayable icons on the mobile electronic device, and the ability to interact with the mobile application, a POSITA reading Low would have been motivated to incorporate such features of Arora in order to interact with multiple NICMs at locations with multiple NICMs, while bringing more convenience to the user, and ultimately increasing sales.

184. In addition, a POSITA, as of December 18, 2013, would have additionally understood the capabilities of the then-existing smartphones, and looked to already existing technology such as that described by Casey (EX1005) to improve user experience.

185. A POSITA would have understood Casey to teach various GUI functionalities and features that greatly improved user experience when performing financial transactions using a mobile device such as a smartphone. A POSITA would have been motivated to combine the system and method of Low in view of Arora with Casey because each discloses the use of a mobile application on a mobile device to facilitate a financial transaction. A POSITA would have understood that any of the conventional features described in Casey could have been used in the system and methods of Low and Arora, particularly as Low explicitly disclosed the use of smartphones, as well as tablets such as the iPad. EX1003, 1:2:16, 4:37-48. A POSITA would have been motivated to combine the disclosures of Casey regarding payment transactions and GUIs with the system of Low and Arora to further expand upon Low's teachings of its purchase application 112 to permit a user to purchase products from Low's NICMs. A POSITA would have also understood that any communication from the vending machine 120 to the user device 110 in FIG. 1 could have been displayed on the user interface of the purchase application 112.

186. The POSITA would have been motivated to combine the system and method of Low in view of Arora with Casey, thereby resulting in a user interface of the mobile application that can accept a user input such as swipe-to-pay or motion, or press a button to trigger payment on a mobile device to facilitate a transaction, or use any “[e]nvironmental factors the device may evaluate include the degree or motion or acceleration, ambient, light, time of day, location as determined by GPS or other location identification services, ambient/background volume/noise levels, communication channel signal strength, running applications or processes, connected peripherals such as headphones, microphone, or docking station, user interaction with any of the various input methods including the buttons and the touch screen, or the length of time since the aforementioned environmental factors have changed” (EX1005, 5:14-23), “optimized to minimize user interact” (*id.*, 5:11-14).

187. A POSITA would have understood that any of the conventional features described in Casey could have been used in the system and methods of Low and Arora, particularly as Low and Arora explicitly disclosed the use of smartphones, as well as tablets such as the iPad.

188. Because accelerometers were commonplace and well-known at the time of filing of Low, the reference is silent regarding features of such devices, even though the user device 110 of Low inherently includes such a component – for

example, in the smartphone mentioned at EX1003, 3:39-43. However, when implementing the system of Low, with or without the benefit of Arora's teachings, a POSITA would have found it obvious to look to readily available accelerometer systems like that described in Casey, EX1005, 7:59-8:13, particularly in view of Arora's reference to them. Arora lists an accelerometer alongside a list of other known technologies ("...Inertial guidance may use an accelerometer and other sensors in the customer 17's personal electronic device 18...") EX1004, 13:28-46.

189. A POSITA would have been motivated to incorporate the features of Casey's accelerometer with the system and method of Low and Arora, particularly because each are directed to the field of facilitating cashless transactions and in view of Low's teaching towards increasing customer convenience, for example, by optimizing user interaction. EX1003, 1:46-48; EX1005, 5:11-23.

190. A POSITA would have found it obvious to use the disclosures regarding the accelerometer features of Casey, particularly because accelerometers were already part of available off-the-shelf mobile devices at the time of the purported invention. As such, incorporating use of a conventional and already existing component within the mobile device would have been routine and conventional.

191. It is my opinion, for the reasons discussed above and below, that claims 1-28 would have been obvious to a POSITA based on Low in view of Arora and Casey.

2. Where Each Element is Found in the Prior Art

192. In my opinion, Low in view of Arora and Casey teaches each and every element in independent claims 1, 15, and 22.

a. Claim elements [1.0]-[1.1], [15.0]-[15.1], and [22.0]-[22.1]

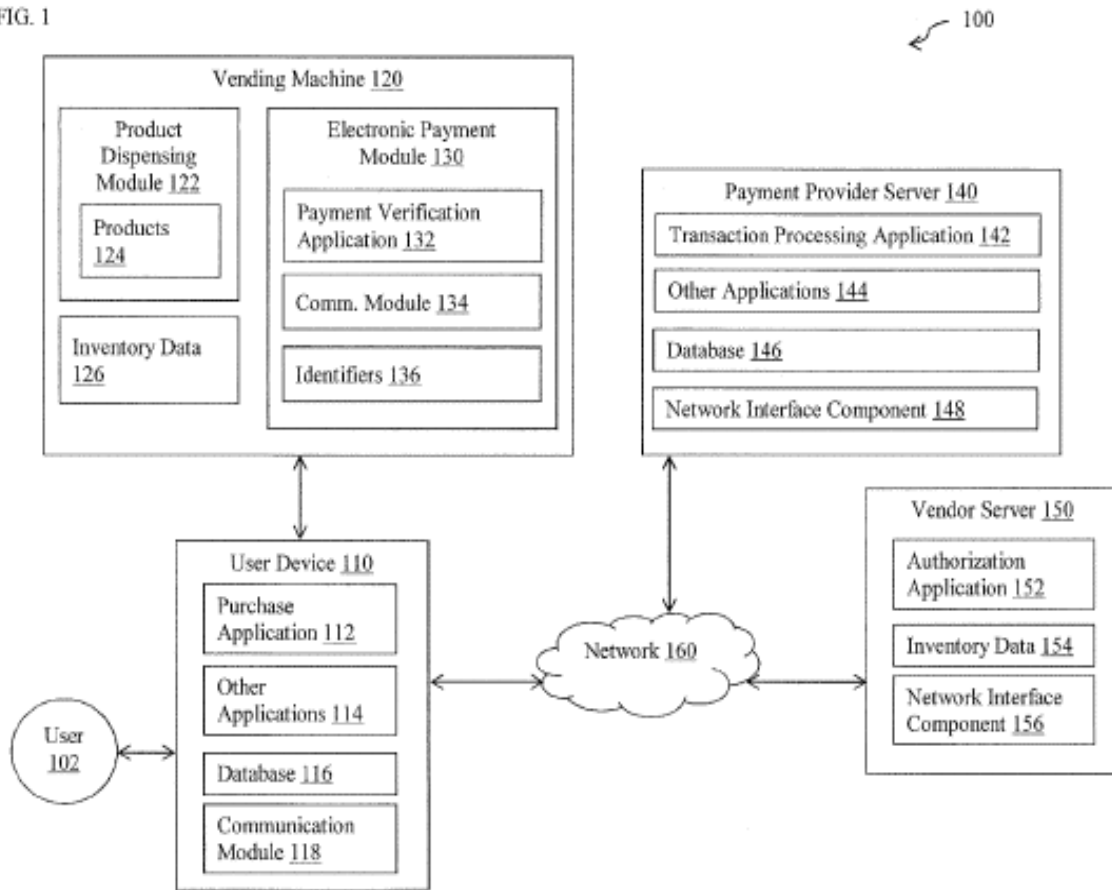
193. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious these elements to a POSITA:

Claim 1	Claim 15	Claim 22
[1.0] A method of executing payment accepting unit events, comprising: [1.1] at a mobile device with one or more processors, memory, one or more output devices including a display, and one or more radio transceivers:	[15.0] A mobile device, comprising: [15.1] one or more radio transceivers; one or more output devices including a display; one or more processors; and memory storing one or more programs to be executed by the one or more processors, the one or more programs comprising instructions for:	[22.0] A non-transitory computer readable storage medium storing one or more programs, [22.1] the one or more programs comprising instructions, which, when executed by a mobile device with one or more processors, one or more output devices including a display, and one or more radio transceivers, cause the mobile device to perform operations comprising:

194. Low discloses a method, a mobile device, and a computer readable storage medium of payment processing (user device 110), for example in FIG. 1, and in the Abstract, which states:

There is provided systems and method for an electronic payment to a non-Internet connected device. The methods include transmitting information corresponding to at least one item for sale at a non-Internet connected machine, receiving a purchase request from a user device for the at least one item from the non-Internet connected machine, and communicating, using a hardware processor of a payment provider server, an approval of the purchase request to the user device, wherein the user device is configured to transmit a purchase authorization to the non-Internet connected machine using a wireless connection.

FIG. 1



EX1003, FIG. 1.

195. Low at Figure 1 includes a user device 110 with a purchase application 112 and a communication module 118, among other features. A user 102 interacts with user device 110, and the user device 110 communicates with the vending machine 120. The vending machine 120 includes, among other things, an electronic payment module 118, identifiers 136, and a product dispensing module 122. The user device 110 also communicates with the payment provider server 140 and vendor server 150 via a network 160.

196. Low discloses that the user device 110 has one or more processors and a memory. For example, Low discloses:

User device 110, vending machine 120, payment provider server 140, and vendor server 150 may each include one or more processors, memories, and other appropriate components for executing instructions such as program code and/or data stored on one or more computer readable mediums to implement the various applications, data, and steps described herein. For example, such instructions may be stored in one or more computer readable media such as memories or data storage devices internal and/or external to various components of system environment 100, and/or accessible over network 160.

EX1003, 3:26-36.

197. Low discloses that the user device 110 includes at least one communication module 118 adapted to communicate with the vending machine 120, including through radio frequency, Bluetooth and NFC devices. EX1003, 4:45-56.

198. Low discloses that the user device 110 has a purchase application 112 executing on the user device 110. EX1003, 3:49-56.

199. Low discloses that the purchase application 112 is a downloadable application having a user interface enabling the user to purchase products for sale

at the vending machine 120. EX1003, 3:57-4:2. The user device 110 can include a GUI. EX1003, 4:24-27. In my opinion, a POSITA would have understood that such devices included a display, and that such GUI could have included those discussed and described in Arora (EX1004) and Casey (EX1005), among other capabilities known by POSITA by December 18, 2013.

200. Low also discloses that the mobile device can be a computer system 500 that performs specific operations by processor 512 and other components by executing one or more sequences of instructions contained in system memory component 514. *See*, for example:

- EX1003, 12:26-38 (“FIG. 5 is a block diagram of a computer system 500 suitable for implementing one or more embodiments of the present disclosure. In various implementations, the user device may comprise a personal computing device (e.g., a personal computer, laptop, smartphone, tablet, PDA, Bluetooth device, key FOB, badge, etc.) capable of communicating with the network. The merchant and/or payment provider may utilize a network computing device (e.g., a network server) capable of communicating with the network. It should be appreciated that each of the devices utilized by users, merchants, and payment providers may be implemented as computer system 500 in a manner as follows.”);
- EX1003, 12:65-13:21 (“Components of computer system 500 also include a system memory component 514 (e.g., RAM), a static storage component 516 (e.g., ROM), and/or a disk drive 517 to store information, such as account information, transaction numbers, machine IDs, and other information

described above. Computer system 500 performs specific operations by processor 512 and other components by executing one or more sequences of instructions contained in system memory component 514. Instructions may be performed by one or more processors 512. Logic may be encoded in a computer readable medium, which may refer to any medium that participates in providing instructions to processor 512 for execution. Such a medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. In various implementations, non-volatile media includes optical or magnetic disks, volatile media includes dynamic memory, such as system memory component 514, and transmission media includes coaxial cables, copper wire, and fiber optics, including wires that comprise bus 502. In one embodiment, the logic is encoded in non-transitory computer readable medium. In one example, transmission media may take the form of acoustic or light waves, such as those generated during radio wave, optical, and infrared data communications.”); and

- EX1003, 13:22-29 (“Some common forms of computer readable media includes, for example, floppy disk, flexible disk, hard disk, magnetic tape, any other magnetic medium, CD-ROM, any other optical medium, punch cards, paper tape, any other physical medium with patterns of holes, RAM, PROM, EPROM, FLASH-EPROM, any other memory chip or cartridge, or any other medium from which a computer is adapted to read.”).

201. Arora also discloses Claim Elements [1.0]-[1.1], [15.0]-[15.1], and [22.0]-[22.1].

202. Arora discloses a personal electronic device, which can be a smartphone, tablet, or PDA, with a GUI and communication ability. *See*, for example, EX1004, 3:64-4:7 (“The customer has a personal electronic device with graphical user interface (GUI) and communication ability. Such a device might be a smartphone, a tablet, a PDA, a laptop, display in an automobile, or other device. The device need not be portable, or handheld, although those are preferred embodiments. Communication may be via a wireless connection, such as Bluetooth®, Wi-Fi™ (IEEE 802.11), a 3G or 4G data cellular connection, near-field communication (NFC), a wired connection to the internet, or other wireless communication means, including future communication means as such technology changes rapidly.”).

203. Arora also discloses that an embodiment includes an application (“app”) that “provides a set of graphical images for the machines associated with the customer.” *Id.*, 4:15-16, 31-33; *see id.*, FIGS. 3 and 7.

204. Arora defines the “personal electronic device” as being “a smartphone, tablet, PDA, laptop, or similar electronic device that comprises a user interface (UI), a processor and memory capable of executing applications (apps), and wireless electronic communications. User interfaces may comprise any combination of display, video projection, touchscreen, keyboard, stylus, audio input, audio output, voice input, voice output, voice recognition, haptics, accelerometer, vision, vision

recognition, motion recognition, face recognition, and the like.” EX1004, 26:65-27:6. The mobile electronic device can be a vending customer’s own mobile electronic device. *Id.*, 2:6-9.

205. In my opinion, a POSITA would have understood that the mobile devices in Low and Arora included a user interface that could have the features and capabilities as previously discussed and described in Casey, EX1005, among other capabilities known by POSITA by December 18, 2013.

206. Casey also discloses “[m]ethods and devices for confirming payment transactions,” EX1005, Abstract, and various user interfaces. EX1005, FIGS. 4-8, 10-13. Casey further discloses already existing components of a smartphone such as an iPhone. *Id.*, 3:64-6:50.

207. To the extent Low does not disclose any one or more of these components, a POSITA would have been motivated to combine the conventional features of Arora’s and Casey’s mobile device with that of Low particularly in view of Low’s disclosure of the user device, and would have had a reasonable expectation of success as these were well-understood, routine, conventional elements that operated according to well-understood, routine, and conventional methodologies, and all of which were widely available by December 18, 2013.

b. Claim elements [1.2], [15.2], [22.2]

Claim 1	Claim 15	Claim 22
[1.2] detecting one or more payment accepting units in proximity to the mobile device,	[15.2] detecting one or more payment accepting units in proximity to the mobile device	[22.2] detecting one or more payment accepting units in proximity to the mobile device,

208. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim element to a POSITA.

209. Low discloses that the user may utilize the user device 110 to detect radio frequency transmission broadcasts and receive data, including locations of available non-internet connected machines (“NICMs”). *See*, for example, EX1003, 2:11-28, 2:38-41, 4:45-5:3, 6:9-16, 10:10-17, 14:52-55. A POSITA would have understood that the data could include a multitude of information, including a device identification, availability of a NICM, and other information necessary for the devices to communicate via a short-range protocol such as Bluetooth or NFC.

210. Low discloses that “[t]he non-Internet connected machine (NICM) transmits a machine identifier to the user device, which allows the user device to retrieve a menu of items at the specific machine from the payment provider or an operator of the machine.” EX1003, 2:16-20. Low further discloses that “in some embodiments, multiple machines may send their unique identifiers, such that the user is able to select one or more machines to purchase from.” *Id.*, 2:25-28.

211. Low also discloses that the user device 110 has identifiers 136 that may be used to identify one or more vending machine 120, and that the identifier 136 may be used to enable quick pairing of user device 110 and the electronic module 130 of vending machine 120 using a wireless short range communication means. EX1003, 6:17-31 (“User device 110 may further include one or more identifiers 136 which may be implemented, for example, as data associated with products 124, data associated with hardware of vending machine 120 and/or electronic payment module 130, or other appropriate data used for authentication/identification of vending machine 120, products 124, and/or electronic payment module 130. In one embodiment, identifiers 136 may include identifiers used by a service provider, such as payment provider server 140, to identify a product, a product price, a product information, vending machine 120, and/or electronic payment module 130. Additionally, identifiers 136 may store user identification corresponding to user device 110, for example, to enable quick pairing of user device 110 and electronic payment module 130 using a wireless short range communication means.”).

212. Low discloses that the vending machine 120 includes the electronic module 130 having a communication interface to communicate the machine identifier and other transaction information. *Id.*, 4:57-5:3 (“Moving to a vending machine 120, vending machine 120 may be a vending machine, kiosk, terminal, or other device for dispensing items that are purchased. Vending machine 120 does

not have Internet connection with network 160, but does have capability of wireline or wireless communication with user device 110, for example using microwave, radio frequency, infrared, Bluetooth, and near field communication, as well as processing as described herein. In one embodiment, vending machine 120 includes an electronic payment module 130 having storage and communication interface to store and communicate a machine identifier and other transaction information, as well as processing (including decrypting) information for dispensing purchased items from vending machine 120, as discussed herein.”).

213. Low also discloses at its claim 12 “[a] method comprising: receiving, by a payment provider, a request to view information associated with at least one of a plurality of non-Internet connected machines associated with a location of a user device for a user, wherein the request comprises the location of the user device; determining, based at least in part on the location, identification of the plurality of non-Internet connected machines within a distance to the user device; communicating the identification of the plurality of non-Internet connected machines to the user device; receiving, from the user device, a selection of a first non-Internet connected machine from the plurality of non-Internet connected machines, wherein the selection comprises identification information of the first non-Internet connected machine”). EX1003, claim 12, 16:12-54.

214. To the extent Low does not disclose the mobile device detecting one or more payment accepting units in proximity to the mobile device, a POSITA would have found this element to be obvious in view of Arora and/or Casey.

215. For example, Low discloses that data can be transmitted to the user device, and that the user device can access payment provider server 140 and receive locations of available NICMs. “Additional data may be transmitted to user device 110 during transmission of information corresponding to items for sale at the non-Internet connected machine. In various embodiments, a user may not know a location of a NICM configured to accept electronic payments. However, the user may utilize a user device to access payment provider server 140 and receive locations of available NICMs with lists of available products at each machine. The user can further receive directions, map coordinates, and/or a GPS location of desired NICM.” *Id.*, 9:14-23.

216. A POSITA would have understood that the user could have utilized the user device to detect available NICMs (corresponding to the one or more payment accepting units) based at least in part on the identifier necessarily broadcasted using the Bluetooth or NFC short-range communications paths used by the NICMs in Low, rather than through the payment provider server 140, particularly in view of the Low’s disclosure regarding disclosure of identifiers from the NICMs based on proximity, disclosure of short-range communication protocols

such as Bluetooth (e.g., “In other embodiments, a NICM and a user device are paired, e.g., through a NFC or Bluetooth communication” (EX1003, 2:38-39); “In various embodiments, electronic payment module 130 includes at least one communication module 134 adapted to communicate with user device 110. In various embodiments, communication module 134 may include various types of wired and/or wireless short range communication devices including microwave, radio frequency, infrared, Bluetooth, and near field communication devices.” (EX1003, 5:9-15)), and FIG. 4, which shows the user device communicating directly with the NICM:

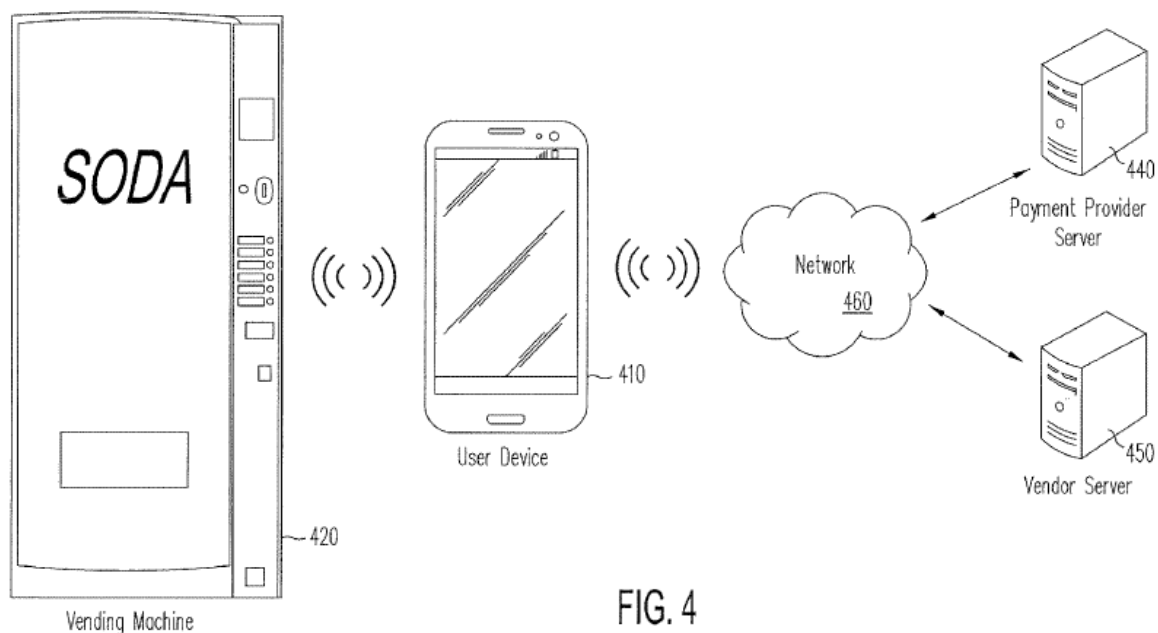


FIG. 4

EX1003, FIG. 4.

217. To the extent Low does not disclose the mobile device detecting one or more payment accepting units in proximity to the mobile device, a POSITA would have been motivated to modify the system and method of Low in view of Arora and/or Casey to have the user device detect the NICMs in proximity to the user device by allowing the user device to detect broadcasted information via short-range communication and pair with the NICM (EX1003, 2:38-39), particularly given Low's disclosure regarding non-connected NICMs, and using the user device to communicate with the NICM. A POSITA would have understood that a user device such as a smartphone had multiple ways to detect and communicate with other devices, including through Bluetooth, Cellular, and NFC. As such, this modification would have been obvious, predictable, and desired in order to facilitate communication with the NICMs, to perform the purchase, and to increase sales using the system in Low.

218. A POSITA would have had a reasonable expectation of success, particularly given the state of the art by December 18, 2013, in which communication protocols such as cellular, Bluetooth, and NFC were widely available, understood, practiced, and taught, and the claim element is stated at a high level of generality.

219. To the extent Low alone does not disclose or render obvious this claim element, Low in view of Arora and Casey would have rendered obvious this claim element to a POSITA.

220. Arora discloses the use of the personal electronic device by the customer, including “the customer selecting either products or **vending machines** from a list of options provided via the user interface of the personal electronic device, wherein the **list of options depends** on the actual available inventory **on vending machines co-located with customer**, and the customer purchase history.” EX1004, Abstract (emphasis add). A POSITA would have understood “co-located” to mean nearby, or in proximity, and Arora confirms that understanding. For example, Arora states that “A customer and vending machine ‘co-located’ or ‘co-location’ means within a transaction distance.” EX1004, 13:6-7. Arora also discloses the use of transaction distances, including “identification distances” to facilitate purchase transactions. *Id.*, 12:37-13:5, 18:38-48.

221. Arora further discloses in several places the ability of the nearby vending machines to communicate its location:

- “In yet another embodiment, each machine associated with a customer is dynamically queried. The machine then queries, using a local communication network, to **determine which machine is closest to the customer at that moment**. Once a unique machine (or a physical group of machines where

each machine in the group stocks products unique to that group) is identified, the customer may initiate a transaction related to that machine.” *Id.*, 5:23-30;

- “Because the app has several ways to identify the location of the mobile user device, and the vending company or the app has maps that associated locations with machines,” *id.*, 7:22-24; and
- “In one embodiment, the location of customers or the location of machines may be determined by examining the network signature created by available within range WiFi™ networks...A third method is for the vending machine, or a device attached to the vending machine, to build a Wi-Fi™ signature. The vending machine may then communicate this signature to the vending company via a communication means in the vending machine, such as through a machine audit device, or may transfer the map to a service technician or driver.” *Id.*, 7:62-8:32.

222. Arora discloses the concept of transaction distances, including an “identification distance”:

- “...A second such distance is ‘identification distance,’ which means that either the customer is able to recognize a particular machine or the machine is able to recognize a particular customer, or both. This distance is not shown in FIG. 1, and is dependent on the specific identification technology being

used. In general, it is greater than the dispensing distance and less than the “within sight” distance...A customer and vending machine “co-located” or “co-location” means within a transaction distance.” *Id.*, 12:41-13:7;

- “In another embodiment, wireless communication, shown in FIG. 5 as 65 and 66, may be used to not only determine identification of both the vending machine and the customer, but also to determine transaction distance, including a dispensing distance. For example, signal strength or signal direction, or both, may be used. It is well known in the art how to construct a radio antenna with a short or narrow usable radio distance.” *Id.*, 18:21-28; and
- “FIG. 6 provides an exemplary flowchart of steps for a customer to purchase a product in one embodiment of this invention. The flowchart starts at 89. In determination and waiting step 90, it is determined whether or not a customer is within a particular transaction distance of a particular vending machine or vending group. Transaction distances are discussed elsewhere, herein. A vending machine location database, 91, is used as part of this determination. When the customer within the transaction distance, in step 92 a message appropriate to the potential transaction is sent to the customer.” *Id.*, 18:37-47.

223. Further, Arora contemplates a long list of wireless communication methodologies and devices, defining that term “wireless communication” as “[m]ethods of communication digital information without the use of wires, including but not limited to local area network (LAN) technology including all variations of IEEE 802.11, such as but not limited to a/b/g/n/p; Wi-Fi™; Wi-Max™; Bluetooth®; VHS; UHS; 900 MHz bands; unregulated bands such as IMS, including 60 GHz bands; RF-ID, including both passive and active, in all bands, including LF, HF, UHF, European and North American UHF, microwave, 2450-5800 MHz, 3.1-10 GHz; all global cellular data bands and technology including 3G and 4G; near field communications (NFC); DASH7; ZigBee; police radio bands, transportation radio bands; marine radio bands, military radio bands; toll transponders; other RF technologies; barcode, matrix code, and character recognition input and output; optical technologies, including infrared (IR); LIDAR; and ultrasonic. Wireless data may be encrypted, or not. All possible modulation technologies and wireless physical layer standards are included, such as FCC, ISO/IEC and IEEE.” EX1004, 27:52-28:3.

224. Thus, to the extent Low does not disclose Claim Elements [1.2], [15.2], [22.2], a POSITA would have been motivated to modify Low in view of Arora and/or Casey to arrive at the claim elements in order to provide additional options for connectivity and to facilitate another purchase in order to drive sales, reduce

unnecessary inconvenience to a customer attempting to make a purchase but not finding success due to either poor cellular reception, difficulty finding a vending machine, and/or going to a vending machine that was not available. Given the state of wireless communication by 2013, including as that discussed and described by Casey, EX1005, 3:59-4:3, a POSITA would have had a reasonable expectation of success in such modification, and such modification would have been conventional and routine.

c. Claim elements [1.3], [15.3], [22.3]

Claim 1	Claim 15	Claim 22
[1.3] including detecting predefined radio transmissions broadcast by the one or more payment accepting units,	[15.3] including detecting predefined radio transmissions broadcast by the one or more payment accepting units,	[22.3] including detecting predefined radio transmissions broadcast by the one or more payment accepting units,

225. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this element to a POSITA.

226. Low discloses that vending machine 120 includes an electronic module 130 having a communication interface to communicate a machine identifier and other transaction information:

Moving to a vending machine 120, vending machine 120 may be a vending machine, kiosk, terminal, or other

device for dispensing items that are purchased. Vending machine 120 does not have Internet connection with network 160, but does have capability of wireline or wireless communication with user device 110, for example using microwave, radio frequency, infrared, Bluetooth, and near field communication, as well as processing as described herein. **In one embodiment, vending machine 120 includes an electronic payment module 130 having storage and communication interface to store and communicate a machine identifier and other transaction information,** as well as processing (including decrypting) information for dispensing purchased items from vending machine 120, as discussed herein. Vending machine 120 may also include an product dispensing module 122 for accepting user input, such as for selecting desired items to purchase, and inventory data 126 corresponding to products sold and/or available. Vending machine 120 may be maintained, for example, by a retail product vendor, such as COCACOLA®.

EX1003, 4:57-5:3 (emphasis added).

227. Given that the user device and NICM pair via NFC or Bluetooth communication, *id.*, 2:38-39, and communicates via the same Bluetooth or NFC communication protocol, *id.*, 2:11-16, a POSITA would have understood the NICM to necessarily broadcast predefined radio transmissions, including a NICM

identification, that is detected by the user device to be able to detect, identify and pair with the NICM, as was commonly understood by a POSITA.

228. Low discloses that the user device 110 includes at least one communication module 118 adapted to communicate with the vending machine 120, and that the communication module 118 may include wired and/or wireless network communication devices including radio frequency, Bluetooth, and NFC devices:

User device 110 may further include one or more identifiers 136 which may be implemented, for example, as data associated with products 124, data associated with hardware of vending machine 120 and/or electronic payment module 130, or other appropriate data used for authentication/identification of vending machine 120, products 124, and/or electronic payment module 130. In one embodiment, identifiers 136 may include identifiers used by a service provider, such as payment provider server 140, to identify a product, a product price, a product information, vending machine 120, and/or electronic payment module 130. Additionally, identifiers 136 may store user identification corresponding to user device 110, for example, to enable quick pairing of user device 110 and electronic payment module 130 using a wireless short range communication means.

EX1003, 4:45-56.

229. Low discloses that “in some embodiments, multiple machines may send their unique identifiers, such that the user is able to select one or more machines to purchase from.” EX1003, 2:25-28; *id.*, 6:17-31. A POSITA would have understood that the unique identifiers are being sent to the user device as part of Bluetooth or NFC data packets transmitted in predefined radio transmission broadcasts by the NICMs, particularly in view of Low’s focus on non-internet connected machines (NICMs).

230. Low also discloses at its claim 12 “[a] method comprising: receiving, by a payment provider, a request to view information associated with at least one of a plurality of non-Internet connected machines associated with a location of a user device for a user, wherein the request comprises the location of the user device; determining, based at least in part on the location, identification of the plurality of non-Internet connected machines within a distance to the user device; communicating the identification of the plurality of non-Internet connected machines to the user device”).

231. A POSITA would have understood such disclosures of Low to disclose or render obvious Claim Elements [1.3], [15.3], [22.3].

232. Arora also discloses that, for example, in FIG. 5, “wireless communication by the vending machine (65), EX1004, 16:37-38, and discloses

various wireless communication methods. *Id.*, 27:52-28:3. As such, a POSITA would have understood that Arora's teaching of a vending machine including various communication methods were readily incorporable, without any modifications to any hardware, and had a reasonable expectation of success when combined with Low.

233. Casey discloses various communication protocols in which each device broadcasts their identification information using internet protocol or other device identification protocol. EX1005, 3:65-4:3; 5:57-6:7; 6:51-7:25. Similarly, a POSITA would have had a reasonable expectation of success in combining Arora and Low with Casey.

d. Claim elements [1.4], [15.4], [22.4]

Claim 1	Claim 15	Claim 22
[1.4] wherein the one or more payment accepting units are payment operated machines that accept payment for dispensing of products and/or services;	[15.4] wherein the one or more payment accepting units are payment operated machines that accept payment for dispensing of products and/or services;	[22.4] wherein the one or more payment accepting units are payment operated machines that accept payment for dispensing of products and/or services;

234. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this element to a POSITA.

235. Low discloses that the one or more vending machines 120 are vending machines that accept payment for dispensing items that are purchased, and include,

for example, a vending machine, kiosk, and terminal. EX1003, 4:57-59 (“Moving to a vending machine 120, vending machine 120 may be a vending machine, kiosk, terminal, or other device for dispensing items that are purchased.”).

236. Arora discloses vending machines that accept payment for dispensing of products or services. EX1004, 4:44-49 (“The customer removes the phone and sees a display of both the machine and a selection of her favorite products. “Dispense Sugar-Os,” she says to her phone. Under control of the app, the vending machine dispenses a package of Sugar-O's with no further actions by the customer.”); *id.*, 21:35-36 (“Products may include services, such a boot cleaning, or access to space. This product list is non-limiting.”).

237. Casey discloses that one of the devices taking part in the transaction may include a vending machine a kiosk. EX1005, 16:36-40.

e. Claim elements [1.5], [15.5], [22.5]

Claim 1	Claim 15	Claim 22
[1.5] displaying a user interface of a mobile payment application on the display of the mobile device,	[15.5] displaying a user interface of a mobile payment application on the display of the mobile device,	[22.5] displaying a user interface of a mobile payment application on the display of the mobile device,

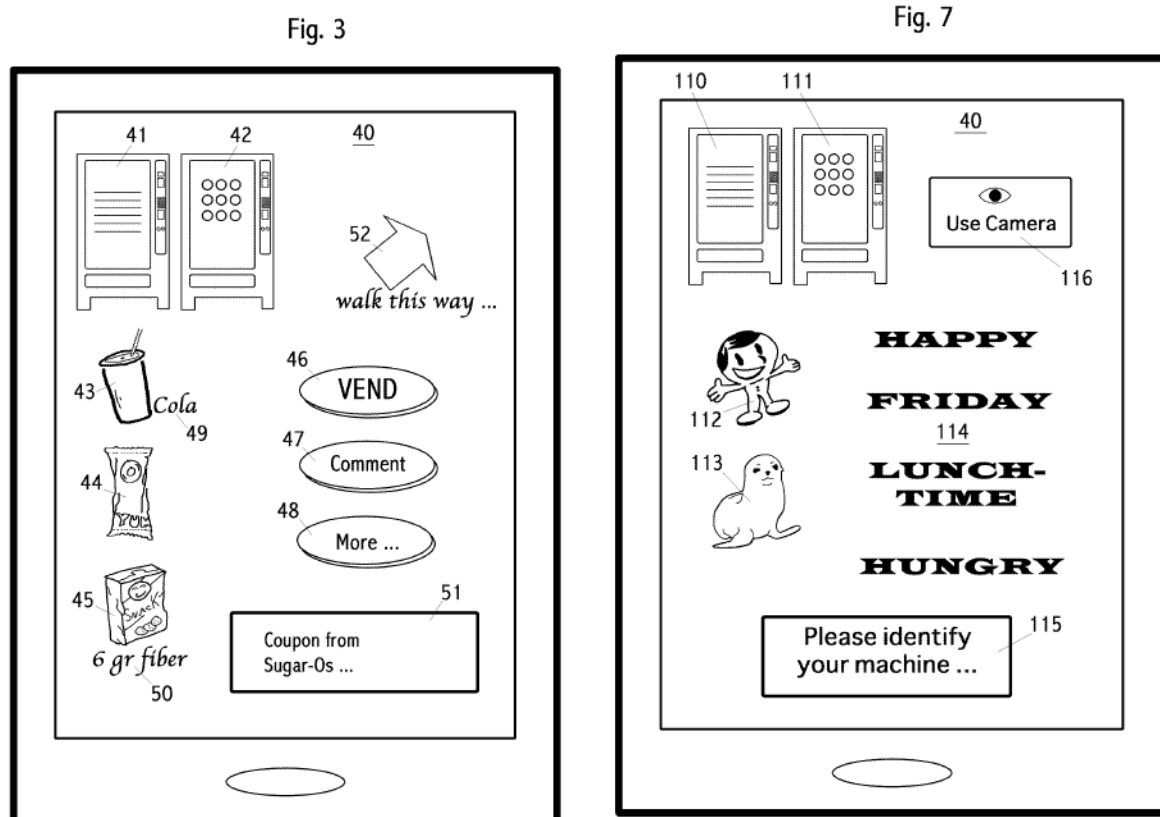
238. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this element to a POSITA.

239. Low discloses that the user device 110 includes the user interface that enables the user to purchase products for sale at the vending machine 120. EX1003, 3:49-4:2 (“User device 110 of FIG. 1 contains a purchase application 112.... Purchase application 112 may be used, for example, to provide a convenient interface to permit user 102 to select, purchase, and dispense products for sale at a vending machine 120. For example, in one embodiment, purchase application 112 may be implemented as a downloadable application having a user interface enabling the user to purchase products for sale at vending machine 120. In some embodiments, purchase application 112 may correspond more generally to a web browser configured to view information available over the Internet or access a website corresponding to products purchasable at vending machine 120. Thus, purchase application 112 may be utilized access marketplace websites and engage in online transactions.”). *See also id.*, FIG. 1. Arora discloses that “[t]he customer has a personal electronic device with graphical user interface (GUI) and communication ability. Such a device might be a smartphone, a tablet, a PDA, a laptop, a display in an automobile, or other device.” EX1004, 3:63-67.

240. Arora discloses that its personal electronic device is a smartphone or other devices executing applications (apps). EX1004, 26:65-27:6 (“Personal electronic device—This is a smartphone, tablet, PDA, laptop, or similar electronic device that comprises a user interface (UI), a processor and memory capable of

executing applications (apps), and wireless electronic communications. User interfaces may comprise any combination of display, video projection, touchscreen, keyboard, stylus, audio input, audio output, voice input, voice output, voice recognition, haptics, accelerometer, vision, vision recognition, motion recognition, face recognition, and the like.”). *Id.*, 3:64-65 (“The customer has a personal electronic device with graphical user interface (GUI) and communication ability.”).

241. This is also disclosed in Figures 3 and 7 of Arora, reproduced below for convenient reference, which show exemplary screenshots of the personal electronic device, *id.*, 11:49-50; *id.*, 11:55-56:



EX1004, FIG. 3, FIG. 7.

242. Casey disclose various different iterations of potential user interfaces of the mobile payment application of the display of the mobile device. EX1005, FIGs. 4-8, 10-13.

f. Claim elements [1.6], [15.6], [22.6]

Claim 1	Claim 15	Claim 22
[1.6] the user interface being configured to display a visual indication of the one or more payment accepting units and	[15.6] the user interface being configured to display a visual indication of the one or more payment accepting units and	[22.6] the user interface being configured to display a visual indication of the one or more payment accepting units and

243. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious these claim elements to a POSITA.

244. Low discloses that the purchase application 112 of the user device 110 may interface with a corresponding module at the vending machine 120 and receive a purchase request containing, for example, a machine identifier. EX1003, 4:3-13 (“In various embodiments, purchase application 112 may access a menu or other data of purchasable products at vending machine 120. However, in other embodiments, purchase application may interface with a corresponding module at vending machine 120 and receive a purchase request containing, for example, a product name, product price, product code, a machine identifier, and/or a

transaction number. Purchase application may further interface with the corresponding module at vending machine 120 to transmit approvals and/or purchase authorizations, thus dispensing the purchased product at a convenient time.”).

245. Low discloses that in some embodiments, “multiple machines may send their unique identifiers, such that the user is able to select one or more machines to purchase from.” *Id.*, 2:11-28 (“According to various embodiments, a consumer device, such as a smartphone or computing tablet, communicates with a non-Internet connected unmanned device/machine via wireless communication, such as Bluetooth or NFC (Near Field Communication) means, for making a payment to the device utilizing a payment provider. The non-Internet connected machine (NICM) transmits a machine identifier to the user device, which allows the user device to retrieve a menu of items at the specific machine from the payment provider or an operator of the machine. In some embodiments, the NICM, the payment provider, and/or the operator of the machine may send product details to the user device to upsell or advertise products available on the NICM. The menu is then displayed on the user device, and the user selects desired item(s) for purchase. Note that in some embodiments, multiple machines may send their unique identifiers, such that the user is able to select one or more machines to purchase from.”). A POSITA would have understood that the purchase application

112 of user 100 could be configured to receive unique identifiers from multiple machines, and that such information could be reviewed as a visual indication of the one or more multiple machines on purchase application 112.

246. In my opinion, a POSITA would have understood that the purchase application 112 of the user device 110 was configurable, if not inherent, to receive unique identifiers from multiple machines, and that such information could be viewed as a visual indication of the one or more multiple machines on the GUI provided by other applications 114. *Id.*, 2:25-28, 4:24-28.

247. To the extent Low does not implicitly disclose Claim Elements [1.6], [15.6], [22.6], Low in view of Arora and/or Casey taught these claim elements.

248. Referring to Figures 3 and 7 of Arora, reproduced below, Arora teaches exemplary GUIs of the personal electronic device, EX1004, 11:49-50; *id.*, 11:55-56:

Fig. 3

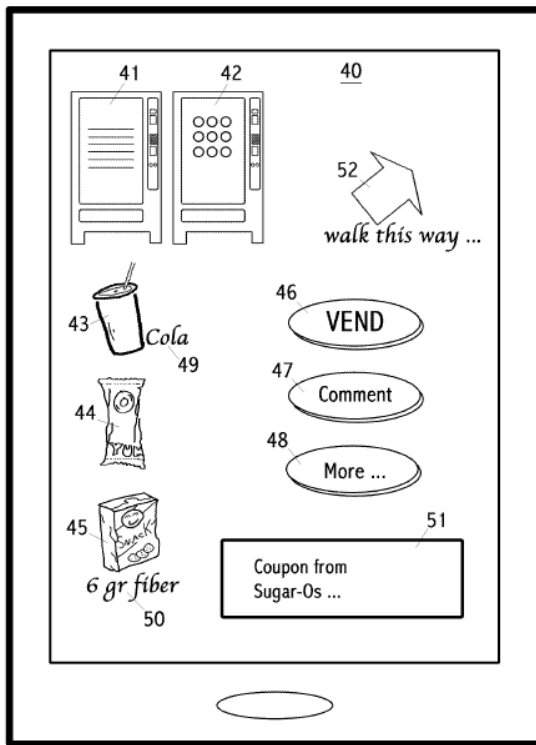
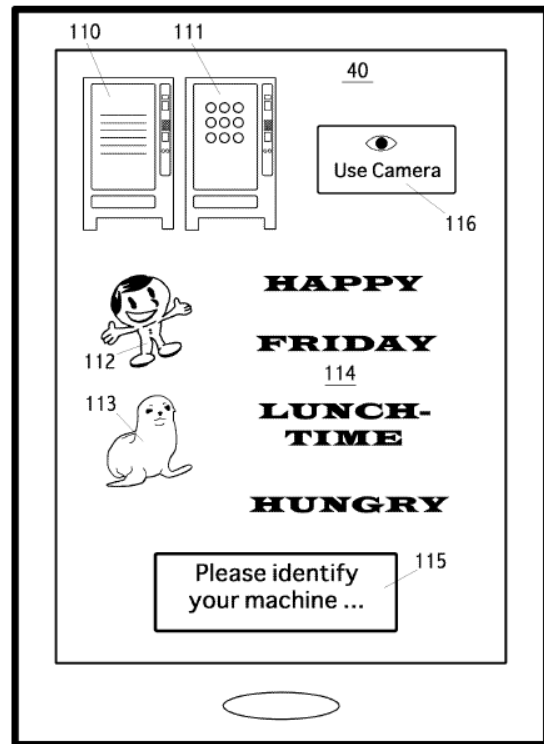


Fig. 7



Id., FIG. 3, FIG. 7.

249. Arora discloses that “FIG. 3 shows an exemplary screen on a personal electronic device, 40. The screen shows two different vending machines, 41 and 42.” *Id.*, 13:47-48. Arora also discloses that “FIG. 7 shows an exemplary screen on a personal electronic device in one embodiment. This screen is used by the customer to identify a particular vending machine. The visible screen is 40. Two different vending machine types are shown, 110 and 111.” *Id.*, 19:30-34.

250. A POSITA would have been motivated to modify the GUI of the user device 110 of Low to display a visual indication of the one or more payment accepting units, as taught by Arora’s exemplary GUIs of Figures 3 and 7, in order

to provide a better user experience to the customer and raise the level of convenience to the customer, particularly in light of the technology of smartphones such as the iPhone by December 18, 2013, which included sophisticated GUIs, including those described by Casey (EX1005, FIGs. 4-9, 10-13), and applying the technology to the field of payment systems including payment accepting units.

g. Claim elements [1.7.1], [15.7.1], [22.7.1]

Claim 1	Claim 15	Claim 22
[1.7.1] accept user input to (i) receive selection by a user of the mobile device of an available payment accepting unit of the one or more payment accepting units and	[15.7.1] accept user input to (i) receive selection by a user of the mobile device of an available payment accepting unit of the one or more payment accepting units and	[22.7.1] accept user input to (i) receive selection by a user of the mobile device of an available payment accepting unit of the one or more payment accepting units and

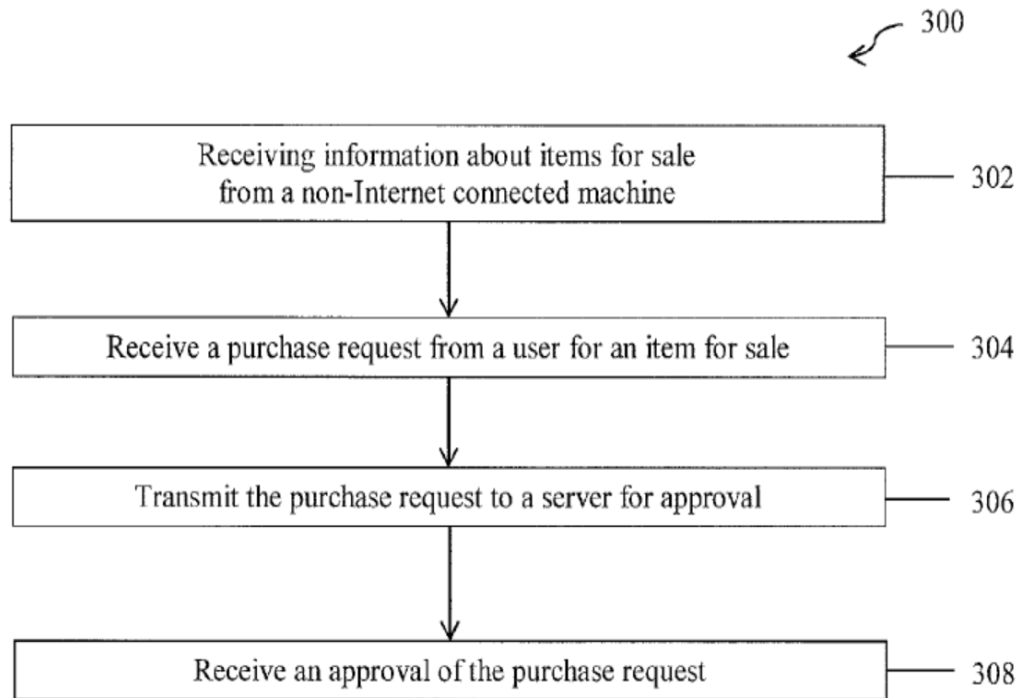
251. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious these claim elements to a POSITA.

252. I incorporate my analysis for claim elements [1.2] and [1.3] above as if fully set forth herein.

253. Low discloses that the user interface of the purchase application 112 is configured to accept user inputs to receive a selection by the user of the user device 110 of an available vending machine 120. EX1003, 2:11-28 (“Note that in some embodiments, multiple machines may send their unique identifiers, such that

the user is able to select one or more machines to purchase from.”). *See also, id.*, claim 12 (“A method comprising: receiving, by a payment provider, a request to view information associated with at least one of a plurality of non-Internet connected machines associated with a location of a user device for a user, wherein the request comprises the location of the user device; determining, based at least in part on the location, identification of the plurality of non-Internet connected machines within a distance to the user device; communicating the identification of the plurality of non-Internet connected machines to the user device; receiving, from the user device, a selection of a first non-Internet connected machine from the plurality of non-Internet connected machines, wherein the selection comprises identification information of the first non-Internet connected machine;”). *Id.*, claim 12, 16:12-54.

254. Low also discloses that the user interface of the purchase application 112 is configured to accept user inputs to receive a selection by the user of the user device 110 of an available vending machine 120. *Id.*, FIG. 3 (step 304).



Id., FIG. 3.

255. To the extent Low does not implicitly include Claim Elements [1.7.1], [15.7.1], [22.7.1], Low in view of Arora and/or Casey teaches these claim elements.

256. As mentioned above, Arora teaches in Figures 3 and 7 exemplary screenshots of GUIs on the personal electronic device, EX1004, 11:49-50; *id.*, 11:55-56.

257. Arora discloses, with respect to the user interface shown in Figure 3, that “In one embodiment, the customer selects which machine she wishes to use by touching icon 41 or 42.” *Id.*, 13:52-54. Arora also discloses with respect to the user interface shown in Figure 7 “Using the touchscreen on her personal electronic device, the customer selects the icon and textual modifier of the desired vending

machine. This action clearly and easily identifies a specific machine.” *Id.*, 19:46-50.

258. A POSITA would have been motivated to modify the GUI of the user device 110 of Low, in view of Arora and/or Casey to accept user input to receive selection by a user of the mobile device of an available payment accepting unit of the one or more payment accepting units as a further way to provide a better user experience to the customer, raise the level of convenience to the customer, and a modification that the POSITA would have had a reasonable expectation of success given the state of technology by December 18, 2013, which included sophisticated GUIs, including those described by Casey (EX1005) and applying the technology to the field of payment systems including payment accepting units.

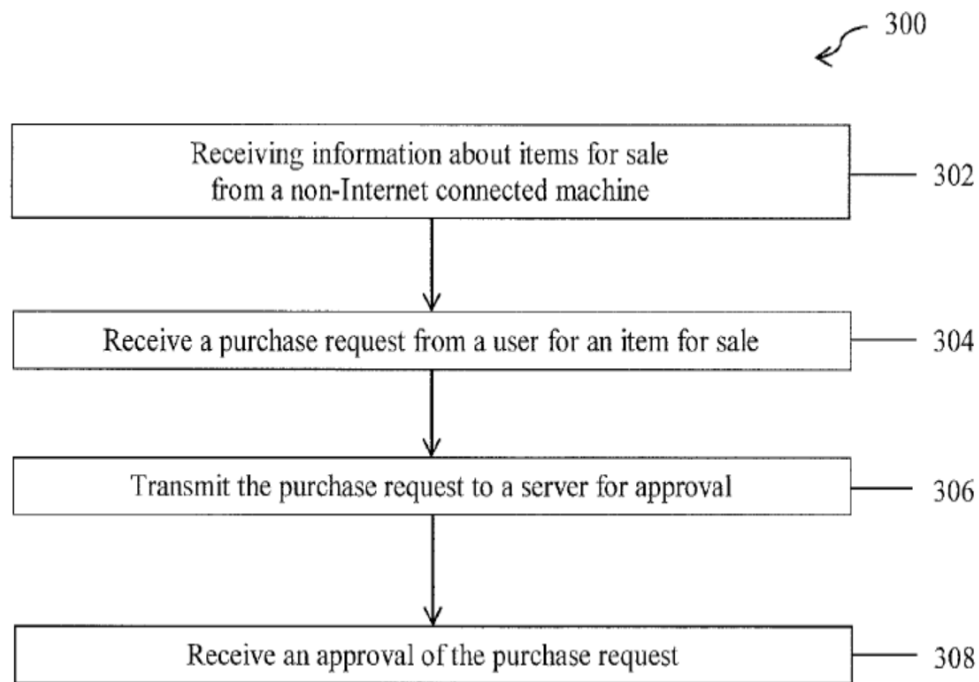
h. Claim elements [1.7.2], [15.7.2], [22.7.2]

Claim 1	Claim 15	Claim 22
[1.7.2] (ii) trigger payment by the mobile payment application for a transaction initiated by the user of the mobile device with the available payment accepting unit of the one or more payment accepting units;	[15.7.2] (ii) trigger payment by the mobile payment application for a transaction initiated by the user of the mobile device with the available payment accepting unit of the one or more payment accepting units;	[22.7.2] (ii) trigger payment by the mobile payment application for a transaction initiated by the user of the mobile device with the available payment accepting unit of the one or more payment accepting units;

259. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious these claim elements to a POSITA.

260. Low discloses “The user device displays the purchase request and, if the information is correct, the user selects a payment button or option on the user device, which communicates the payment request to a payment provider. After processing, the payment provider may approve the payment request and communicate the approval directly to an operator of the machine, such as a vendor server, or may communicate the approval to the user device to be transmitted to the operator of the machine.” EX1003, 2:46-54.

261. Further, in the flowchart shown at Figure 3 of Low illustrating a method for use of a user device for an electronic payment to a NICM, Low discloses a method for use by user device 110 for an electronic payment to the vending machine 120 including a step 306, wherein the user device 110 transmits the purchase request to a server. *Id.*, 10:41-57. *Id.*, FIG. 3 (step 306).



262. To the extent Low does not render obvious these claim elements, Low in view of Arora and Casey teaches the claim elements.

263. Arora discloses that “[I]n yet another embodiment, the app provides the user with an alternative method to pay for the product. Such an alternative method may be more convenient for the customer, such as not having to carry change, or may provide other benefits, such as record keeping, discounts, points, or other incentives. EX1004, 6:7-12.

264. Arora also discloses “[o]ther features and benefits of embodiments of this invention include... ability of the customer to pay via different modes... elimination of the need for the customer to carry cash or a physical payment card.” *Id.*, 2:16-30.

265. Arora further discloses that “[f]or maximum convenience and speed, a customer would prefer that as soon as they have approved the purchase or the payment of the purchase that the transaction completes. Therefore, in a novel embodiment, dispensing a desired product occurs immediately after the customer purchase or payment step.” *Id.*, 25:28-33.

266. Such disclosures regarding payment using a mobile app, particularly in view of the capabilities of GUIs by December 18, 2013, see, e.g., EX1005, FIG 5, would have rendered obvious these claim elements to a POSITA.

i. Claim elements [1.8], [15.8], [22.8]

Claim 1	Claim 15	Claim 22
[1.8] establishing via the one or more radio transceivers a wireless connection between the mobile device and the available payment accepting unit of the one or more payment accepting units;	[15.8] establishing via the one or more radio transceivers a wireless connection between the mobile device and the available payment accepting unit of the one or more payment accepting units;	[22.8] establishing via the one or more radio transceivers a wireless connection between the mobile device and the available payment accepting unit of the one or more payment accepting units;

267. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this element to a POSITA.

268. Low discloses that the user device 110 includes at least one communication module 118 adapted to communicate with the vending machine 120, including through radio frequency, Bluetooth and NFC devices. *Id.*, 4:45-56.

269. Low also discloses that the user device, such as a smartphone, communicates with the unmanned device/machine via wireless communication, such as Bluetooth or NFC. *Id.*, 2:11-16.

270. Low discloses a method for use by the user device 110 that includes a step 302, at which step the communication module 118 of the user device 110 connects to the communication module 134 of the electronic payment module of the vending machine 120. *Id.*, 10:1-17.

271. Arora also discloses, for example at FIG. 5, a connection between the vending machine 60 and the personal electronic device 67 through wireless communication 66. EX1004, 17:40-43 (“The possible technologies for wireless communication by the vending machine, 65 and by the customer's device, 66, are discussed elsewhere, herein.”); *id.* at 3:63-4:7; 27:52-28:3.

272. Casey further discloses various ways of establishing a wireless connection between two devices. EX1005, 16:21-36.

j. Claim elements [1.9], [15.9], [22.9]

Claim 1	Claim 15	Claim 22
[1.9] after establishing the wireless connection, enabling user interaction with the user interface of the mobile payment application to complete the transaction;	[15.9] after establishing the wireless connection, enabling user interaction with the user interface of the mobile payment application to complete the transaction;	[22.9] after establishing the wireless connection, enabling user interaction with the user interface of the mobile payment application to complete the transaction;

273. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious these claim elements to a POSITA.

274. Low discloses that “[f]or example, user 102 may utilize user device 110 to view and select a product while user device 110 is in communication with electronic payment module 130.” EX1003, 10:26-27.

275. Low discloses that the “user device receives a purchase request for an item for sale at step 304,” and that the purchase request may be received after a user utilizes the user device 110 to select at least one of products 124 for purchase. *Id.*, 10:18-26. A GUI may be provided on the user device for interaction by the user. *Id.* 4:24-28.

276. Low discloses that the user device 110 may receive the approval and use a payment authorization included in the approval with the electronic payment module 130 to dispense a purchased product 124 from the vending machine 120. *Id.*, 10:55-61.

277. Low discloses that the purchase request may be received after the user utilizes the user device 110 to select at least one of the products 124 for purchase. *Id.*, 10:18-26 (“Once the user device has received information about items for sale at the non-Internet connected machine, the user device receives a purchase request for an item for sale at step 304. The purchase request may designate a product name, product price, product code, a machine identifier, and/or a transaction number. The purchase request may be received after a user utilizes user device 110 and/or vending machine 120 to select at least one product of products 124 for purchase.”).

278. A POSITA would have found it obvious, in view of Arora and/or Casey, to enable user interaction with the user interface of the purchase application 112 of the user device 110 of Low after establishing the wireless connection in order to provide more options to the user to conduct a payment transaction. The purpose of establishing the connection prior to enabling user interaction would have been to prevent the chance of the user conducting a transaction with a different machine, which could lead to a poor user experience. A POSITA would have been well aware of the capabilities of mobile device technology as of December 18, 2013. A POSITA having Low in hand, would have found it obvious and known to look to solutions such as those taught in Arora and/or Casey, to arrive at the claimed element.

279. To the extent Low alone does not disclose or teach these claim elements, a POSITA would have been motivated to combine the user interfaces of Arora and/or Casey with the user device of Low in order to provide further usability and convenience to the user of the mobile payment application.

280. Arora discloses:

- “In one embodiment, a customer may identify a vending machine, at least in part, by identifying the icon, 63, on the vending machine. Such an identification may be on the customer's personal electronic device touchscreen, by selecting the icon from a set of icons, for example.” EX1004, 16:42-46.
- As to Figure 7, showing an exemplary screen on a personal electronic device in one embodiment, “[u]sing the touchscreen on her personal electronic device, the customer selects the icon and textual modifier of the desired vending machine.” *Id.*, 19:46-49.
- Further, the definition of personal electronic device expressly includes a touchscreen. (“Personal electronic device—This is a smartphone, tablet, PDA, laptop, or similar electronic device that comprises a user interface (UI), a processor and memory capable of executing applications (apps), and wireless electronic communications. User interfaces may comprise any combination of display, video projection, **touchscreen**, keyboard, stylus,

audio input, audio output, voice input, voice output, voice recognition, haptics, accelerometer, vision, vision recognition, motion recognition, face recognition, and the like.”). *Id.*, 26:65-27:10.

281. A POSITA would have found it obvious to include the step of enabling user interaction with the user interface of the mobile payment application of the user device of Low, in view of Arora and Casey, to complete the transaction after the establishment of the wireless connection in order to ensure that the transaction was secure, especially as such practices were routine and conventional in view of the state of the art as of December 18, 2013, *e.g.*, EX1005, FIG. 5.

k. Claim elements [1.10], [15.10], [22.10]

Claim 1	Claim 15	Claim 22
[1.10] exchanging information with the available payment accepting unit via the one or more radio transceivers, in conjunction with the transaction; and	[15.10] exchanging information with the available payment accepting unit via the one or more radio transceivers, in conjunction with the transaction; and	[22.10] exchanging information with the available payment accepting unit via the one or more radio transceivers, in conjunction with the transaction; and

282. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious these claim elements to a POSITA.

283. Low discloses that “[f]or example, user 102 may utilize user device 110 to view and select a product while user device 110 is in communication with electronic payment module 130.” EX1003, 10:26-27.

284. Low discloses that a method for use by the user device 110 includes a step 302, at which step the communication module 118 of the user device 110 connects to communication module 134 of the electronic payment module of vending machine 120. *Id.*, 10:1-17 (“FIG. 3 is a flowchart illustrating a method for use by a user device for an electronic payment to a non-Internet connected device according to one embodiment. FIG. 3 presents a method according to another embodiment for an electronic payment. At step 302, a user device, such as user device 110, receives information about items for sale from a non-Internet connected machine. In embodiments of FIG. 3, communication module 118 of user device 110 connects to communication module 134 of electronic payment module 130. As previously discussed, user device 110 and electronic payment module may utilize a short range wireless communication connection, such as near field communication, radio communication, infrared communication, and Bluetooth communication. User device 110 may transmit a device identifier and receive a listing of items for sale, as well as information corresponding to vending machine 120, such as a machine identifier.”).

285. A POSITA would have understood that such disclosure, as noted in my previous paragraph, includes these claim elements, as communication modules, such as the communication module 118, exchange information as a matter of course. Such information would have been exchanged in order to facilitate Low's goal of providing "systems and method for an electronic payment to a non-Internet connected device" where the "methods include transmitting information corresponding to at least one item for sale at a non-Internet connected machine...wherein the user device is configured to transmit a purchase authorization to the non-Internet connected machine using a wireless connection." *Id.*, Abstract.

286. Arora discloses these claim elements throughout its disclosure. For example, Arora discloses that: "Once a unique machine (or a physical group of machines where each machine in the group stocks products unique to that group) is identified, the customer may initiate a transaction related to that machine. One such transaction might be to report a problem with the machine or with a product. Another such transaction might be to report that a product is sold out of the machine. Another such transaction might be to request a different product in the machine. Another such transaction might be to take advantage of an incentive or promotion, such as a coupon, sale or discount, points, contest entry, ability to vote, games or

other products, services or features. Another such transaction might be to accumulate points or value in a loyalty program.” EX1004,5:27-39.

287. Casey further discloses exchanging information via the one or more radio transceivers via the various communication protocols, and using such protocols with the system of Low (alone or in view of Arora) would have been well-understood and routine to a POSITA. EX1005, 3:65-4:3; 5:57-6:7; 6:51-7:25.

I. Claim elements [1.11], [15.11], [22.11]

Claim 1	Claim 15	Claim 22
[1.11] in response to receiving the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device.	[15.11] in response to receiving the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device.	[22.11] in response to receiving the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device

288. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious these claim elements to a POSITA.

289. Low discloses that approval is received by the user device 110. EX1003, 10:55-61 (“Once transaction processing application 142 has processed the purchase request, an approval is received by the user device of the purchase request at step 308. User device 110 may receive the approval and use a payment authorization included in the approval with electronic payment module 130 to

dispense a purchased item of products 124 from vending machine 120.). A POSITA would have understood that this approval may be conveyed to the user device 110 via the purchase application 112.

290. In my opinion, a POSITA would have understood that the information would be conveyed to the user device 110 via the purchase application 112 and/or other application 114 (GUI).

291. To the extent Low does not include or render obvious these claim elements, Arora and Casey teach these claim elements, and a POSITA would have been motivated to modify the system of Low in view of the teachings of Arora and Casey as part of a routine, conventional design choice, and in order to provide a better user experience and keep the user updated on the status of the transaction.

292. For example, Arora discloses at that, regarding the embodiment shown at Figure 3:

FIG. 3 shows an exemplary screen on a personal electronic device, 40. The screen shows two different vending machines, 41 and 42. In one embodiment, the icons or photographs, 41 and 42 are representative of two actual machines co-located with a customer and owner of the personal electronic device, whose screen is shown, 40. In one embodiment, **for a transaction step, the customer selects which machine she wishes to use by touching icon 41 or 42.** An optional arrow, 52, helps direct the

customer to a vending machine. Such an arrow is particularly helpful if the customer has no prior purchase history from a particular vending machine or group of machines. The instructions under the arrow, 52, may provide additional information, such as ‘take the escalator to the lobby,’ or ‘vending machines located in the lunch room.’ The customer may be offered products in the vending machines via icons or text, or both, shown as 43, 44 and 45. These products may be prior purchases by the customer, or products previously identified by the customer as favorites, or products recommended by the vending company. The group of products 43, 44, and 45 may have user interface features such as scrolling, to show additional products. Products may be described by text, such as a ‘cola,’ shown by text 49. Products may be specific, such as the ‘Yums’ shown as 44, or generic, such as the cola drink, 43. **Additional information about the product may be displayed, such as ‘6 gr fiber,’ shown as 50.** Additional, optional, communication from the vending company to the customer is shown in the box 51. Here, a coupon for a product is offered. Many other promotions and awards are possible, as discussed elsewhere, herein. **The customer is offered transaction options, including purchasing and dispensing the product, which may be a single touch, such as the ‘VEND’ button, 46.** The customer may leave feedback,

by touching the “Comment” button, 47. Such feedback options are discussed elsewhere, herein. More customer options are available via the ‘More ...’ button, 48. Some such options are discussed elsewhere, herein.

EX1004, 13:47-14:16 (emphases added).

293. Arora also discloses that:

Optional user interface items include holding a finger on a product icon, causing a popup text box with more product information; double-tapping a product icon to bring up a more detailed information screen, and **additional customer options, such selecting the product as a favorite; swiping from a product icon to off-screen to remove a product from the displayed list; and scrolling the product list with a smooth finger motion vertically on the screen to see additional product offerings.** A search field may be provided (not shown in FIG. 3) for customer to enter or speak a product name, product class, or product attribute, such as ‘healthy snacks.’ For the exemplary screen shown, only two touches are required to vend a product: the product selection (43, 44 or 45) and the ‘VEND’ button, 46. Alternatively, if the smartphone in this exemplary embodiment is voice enabled, the customer may say, ‘dispense Yums,’ or ‘vend a cola’ as the only action necessary to cause the vending machine to

dispense the spoken product, when the customer is within dispensing range of the machine. In one embodiment, the customer may select a product combination in a single step, such as by saying, ‘vend a cola and the fiber snack,’ or by selecting an icon that shows two or more products in combination (not shown in FIG. 3). Note that machine 41 dispenses snacks, and machine 42 dispenses drinks. As these are the only two machines offered in this screen, it is not necessary to select a machine if a product is selected. **In one embodiment if the customer selects a particular machine, such as 42, the product display changes to show only products available from that vending machine, such as beverages.** The list of products shown, here 43, 44 and 45, may be sorted based on a sort criteria, such as (i) products most often purchased in the past by this customer; (ii) products that are most often purchased from this vending machine; (iii) products being promoted for some reason by the vending company; or (iv) another sort criteria.

Id., 14:17-51 (emphases added).

294. Casey also discloses that:

After confirming the payment transaction, the device 10 may display a receipt screen 194. The receipt screen 194 may include an electronic receipt for the payment transaction that may describe the items purchased, the amount tendered, the payment instrument, and other

information related to the payment transaction. The receipt screen 194 also may include a graphical element 196 that may be selected to email the electronic receipt to an email account. In other embodiments, the electronic receipt may be stored within an electronic wallet. From the receipt screen 194, a graphical element 198 may be selected to return to the shopping application main menu 80 (FIG. 4) to continue shopping.

EX1005, 14:25-32.

m. Claims 2 and 23

Claim 2	Claim 23
The method of claim 1, wherein the updated user interface of the mobile payment application includes at least one of: a message displayed on the display of the mobile device; a banner notification displayed on a display of the mobile device; and/or a visual alert from one or more LEDs of the mobile device.	The non-transitory computer readable storage medium of claim 22, wherein the updated user interface of the mobile payment application includes at least one of: a message displayed on the display of the mobile device; a banner notification displayed on a display of the mobile device; and/or a visual alert from one or more LEDs of the mobile device.

295. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious these claims to a POSITA.

296. Low in view of Arora and Casey would have disclosed or rendered obvious as a whole each of claims 1 and 22. *See* Section X.A.2 above.

297. In an embodiment, Low discloses that purchase application 112 may be implemented as a downloadable application having a user interface enabling the user to purchase products for sale at vending machine 120. EX1003, 3:57-4:2.

298. A POSITA would have understood that this approval may be conveyed to the user device 110 of Low via the purchase application 112 through a message displayed on the display of the mobile device, a banner notification displayed on a display of the mobile device, and/or a visual alert from one or more LEDs of the mobile devices, as taught in the prior art, particularly in view of the state of the art as of December 18, 2013, which included smartphone technology with these conventional capabilities. *See* Casey (EX1005) at 4:38-40, and FIGS. 4-8, 10-13.

299. In my opinion, a POSITA would have understood that the user interface of the purchase application 112 and/or application 114 (GUI) could include at least one of the message, banner or visual alert claimed, particularly in view of Low's disclosure that application 114 may also include email, texting, voice and IM applications that allow user 102 to send and receive emails, calls, texts, and other notifications. EX1003, 4:14-27, 3:57-4:2.

300. Low further discloses that the NICM may send out product details to the user device 110 to upsell or advertise products available on the machine. *Id.*, 2:20-25 ("In some embodiments, the NICM, the payment provider, and/or the operator of the machine may send product details to the user device to upsell or

advertise products available on the NICM. The menu is then displayed on the user device, and the user selects desired item(s) for purchase.”).

301. A POSITA would have understood that mobile smartphone devices commonly used LED as part of their screen displays, and with a supporting app or software implementation receive communication from vending machines through a combination of messages, banner notifications, visual alerts, and other ways, were already known in the art and would have been obvious to POSITA, particularly in view of the state of the state, for example, as discussed by Casey (EX1005, 4:28-40).

302. To the extent Low does not implicitly include or render these claim elements obvious, Low in view of Arora and Casey would have rendered obvious the claim elements.

303. Arora discusses messages at various points of the transaction, for example, “[w]hen the customer within the transaction distance, in step 92 [of FIG.6], a message appropriate to the potential transaction is sent to the customer, ” EX1004, 18:44-47. Arora also discloses “[a]dditional embodiments shown in FIG. 7 include an option to use the camera in the personal electronic device, shown with a touch button 116. There is also a message area to the customer, with a displayed message in the box, 115.” *Id.*, 19:57-60. Casey also teaches that the display may

display various images including text documents, text messages, “among other things.” EX1005, 4:38-40.

n. Claims 3 and 24

Claim 3	Claim 24
The method of claim 1, wherein the information indicates completion of the transaction between the user of the mobile device and the available payment accepting unit.	The non-transitory computer readable storage medium of claim 22, wherein the information indicates completion of the transaction between the user of the mobile device and the available payment accepting unit.

304. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious these claims to a POSITA.

305. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole claims 1 and 22. *See* Section X.A.2 above.

306. Low discloses that “[o]nce transaction processing application 142 has processed the purchase request, an approval is received by the user device of the purchase request at step 308. User device 110 may receive the approval and use a payment authorization included in the approval with electronic payment module 130 to dispense a purchased item of products 124 from vending machine 120.” EX1003, 10:55-61.

307. To the extent Low does not include claimed subject matter, a POSITA would have found it obvious to modify the system and method of Low, in view of

Arora and/or Casey, to arrive at the claims, particularly in view of Casey (EX1005, FIG 10). In particular, a POSITA would have understood that various types of information can be transmitted as part of a transaction, and information regarding completion of a transaction would be just one of those types. A POSITA would have been motivated to include this information in order to provide a better user experience and increase the convenience to the user, who might want to know when the transaction is complete. A POSITA would have had a reasonable expectation of success as the modification would have been routine.

o. Claim 4

Claim 4
The method of claim 2, wherein the mobile device includes a long-range transceiver and the information at least includes an amount of the completed transaction, and the method further comprises: sending at least the amount of the completed transaction to a server via the long-range transceiver.

308. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim to a POSITA.

309. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole each of claims 1 and 2, as discussed above.

310. Low discloses that the user device 110 includes at least one communication module 118. EX1003, 4:45-56. In addition, Arora discloses that

its personal electronic device includes communication ability which can include various connections, including Bluetooth, WiFi, 3G, 4G, and NFC. EX1004, 3:64-4:7.

311. Low also discloses that payment provider server 140 includes a transaction processing application 142 that processes a funding source according to payment details included in the payment request, such as a product price. EX1003, 10:41-54 (“At step 306, the user device transmits the purchase request to a server for approval. The purchase request may be transmitted to payment provider server 140 for approval as discussed herein. Transaction processing application 142 of payment provider server 140 may process a funding source according to payment details included in the payment request, such as a product price and/or transaction number. Transaction processing application 142 may utilize a user account provided with the purchase request to acquire a funding source, or the funding source may be provided in the purchase request. As previously discussed, transaction processing application 142 may determine if there are any restrictions and/or limitations corresponding to the user account and may take appropriate actions as desired.”).

312. Low similarly discloses “[t]he user device displays the purchase request and, if the information is correct, the user selects a payment button or option

on the user device, which communicates the payment request to a payment provider.” *Id.*, 2:46-49.

313. In my opinion, a POSITA would have found it obvious to modify the system and method of Low in view of Arora and/or Casey to send the amount of the completed transaction by the user device to the payment provider server via one of the communication modules that operates via a long range communication protocol. A POSITA would have been motivated to include communication of this information in order to update the payment provider in the ordinary course of business, for example, to update the user’s account (for example, change the account charge from “pending” to “completed”), track sales via a particular NICM, and to determine if such sale was successful. A POSITA would have understood this addition in Low, in view of Arora and Casey, to be routine and conventional. EX1005, 10:14-19.

p. Claims 5 and 26

Claim 5	Claim 26
The method of claim 1, wherein the information indicates abortion of the transaction initiated by the user of the mobile device.	The non-transitory computer readable storage medium of claim 22, wherein the information indicates abortion of the transaction initiated by the user of the mobile device.

314. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious these claims to a POSITA.

315. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole each of claims 1 and 22. *See* Section X.A.2 above.

316. In my opinion, a POSITA would have understood that Low inherently includes, or at minimum teaches the subject matter recited in these claims, particularly in view of Low's disclosure of "the payment provider process[ing] the request, and if approved, send[ing] approval information back to the user device." EX1003, 2:32-34.

317. Low similarly discloses "[t]he user device displays the purchase request and, if the information is correct, the user selects a payment button or option on the user device, which communicates the payment request to a payment provider" (emphasis added). EX1003, 2:46-49.

318. In my opinion, a POSITA would have understood that the system and method of Low would also contemplate a situation of returning information back to the user device if the request is not approved. Additionally, a POSITA would have understood that if the information is not correct and the user does not select a payment button or option on the user device, then the transaction is aborted.

319. To the extent Low does not include or teach this element, Arora discloses "When a timely response has been received, step 95 verifies the validity of the response... If the customer response fails verification, the flowchart reverts to step 90 or 92." EX1004, 18:56-67. Step 92 is an initial solicitation of the

customer. Accordingly, sending a message as part of a transaction to convey information to the customer was known in the prior art. A POSITA would have found it obvious that the message could be conveyed at various stages of the transaction in order to communicate information back to the customer, and would have further understood that such message could include, success, failure, or other information.

320. A POSITA would have understood that any communications from the vending machine would necessarily have been displayed on the mobile interface or, at minimum, would have been obvious to display, particularly in view of Casey (EX1005).

q. Claims 6 and 27

Claim 6	Claim 27
The method of claim 1, wherein the information indicates failure of the transaction initiated by the user of the mobile device or a malfunction associated with the available payment accepting unit.	The non-transitory computer readable storage medium of claim 22, wherein the information indicates failure of the transaction initiated by the user of the mobile device or a malfunction associated with the available payment accepting unit.

321. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious these claims to a POSITA.

322. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole each of claims 1 and 22. *See* Section X.A.2 above.

323. Low discloses these claims for the same reasons as stated above, with respect to claims 4 and 5. To the extent that Low does not include the claim recitations , a POSITA would have understood that Low, in view of Arora and/or Casey, would have rendered obvious that the information indicate failure of the vending transaction initiated by the user of the mobile device or a malfunction associated with the available payment accepting unit.

324. Low discloses that “[o]nce transaction processing application 142 has processed the purchase request, an approval is received by the user device of the purchase request at step 308. User device 110 may receive the approval and use a payment authorization included in the approval with electronic payment module 130 to dispense a purchased item of products 124 from vending machine 120.” EX1003, 10:55-61.

325. In my opinion, a POSITA would have understood that the system and method of Low, in view of Arora and Casey, would also contemplate a situation of returning information back to the user device if the information indicates failure of the vending transaction initiated by the user of the mobile device or a malfunction.

r. Claim 7

Claim 7.1

The method of claim 1, **wherein the mobile device includes an accelerometer and the method further comprises:**

326. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim element to a POSITA.

327. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole claim 1. *See* Section X.A.2 above.

328. In addition, Low, in view of Casey, would have disclosed that the mobile device includes a motion sensing device such as an accelerometer. EX1005, 7:59-8:13.

Claim 7.2

based on data from the accelerometer, determining whether the user is walking away from the available payment accepting unit; and

329. Low, in view of Arora and Casey, would have rendered obvious this further claim element, based on at least EX1005, 7:59-8:13.

330. Casey discloses:

In addition to receiving user input through the input structures 60 and the touch screen 54, **the device 10 may include a motion sensing device 62 for receiving user input. The motion sensing device 62 may be any device configured to measure motion or acceleration, such as**

an accelerometer or a gyroscope. In one embodiment, the motion sensing device 40 may be a three-axis accelerometer that includes a sensing element and an integrated circuit interface for providing the measured acceleration and/or motion data to the CPU 46. The motion sensing device 62 may be configured to sense and measure various types of motion including, but not limited to, velocity, acceleration, rotation, and direction.

Motion data acquired by the motion sensing device 62 may be used to confirm a payment transaction. As discussed further below, the motion sensing device 62 may be configured to sense motion of the device 10 and transmit motion data to the CPU 46 to adjust one or more graphical elements shown on the display 24. For example, a graphical element, such as a slide bar, may be moved across the display 24 in response to sensed motion. In certain embodiments, the position of the graphical element may be used to confirm or decline a payment transaction.

Id., 7:59-8:13 (emphasis added).

331. Based on above-reproduced disclosure in Casey, a POSITA would have understood that the accelerometer of the mobile device of Low, in view of Arora and Casey, could be used to measure motion or acceleration, and that such form of user data could be used to confirm or decline payment transaction.

332. Casey also discloses that:

As the device 10 senses motion, either through the touch screen 54 or the motion sensing device 62, the device 10 may acquire motion data corresponding to the sensed motion. In certain embodiments, the motion data may represent direction, distance, Velocity, and/or the location of the graphical elements, among other things. The device 10 may use the motion data to determine (block 74) whether the payment selection was confirmed.

Id., 9:55-60.

333. A POSITA would have found it obvious to modify the user device of Low, in view of Arora and Casey, to have the accelerometer determine whether the user (holding the user device) was walking away from (or towards) the payment accepting unit. EX1003, 11:36-38; EX1004, 4:40; EX1005, 7:59-8:13.

Claim 7.3
in accordance with a determination that the user is walking away from the available payment accepting unit, canceling the wireless connection.

334. In my opinion, a POSITA would have understood Low, in view of Arora and/or Casey, to teach the use of accelerometers on the user device 110 as another means for which the user device could receive information regarding the vending machine 120 upon the user approaching the vending machine. EX1003, 11:36-38; EX1004, 4:40; EX1005, 7:59-8:13. A POSITA would have understood that the hardware and software of the user device 110 could include an

accelerometer, and look to Casey to understand that certain accelerometer data may be used to initiate interaction (or payments) between two devices.

335. Low, in view of Arora and Casey, teach adding an accelerometer, or configuring the existing accelerometer inherent in Low's user device 110, and configuring Low's user device 110 to, based on data from the accelerometer, determine whether the user is walking away from the available payment accepting unit, and if the user is walking away from the available payment accepting unit, canceling the wireless connection, as recited in claim 7. *See*, for example, EX1003, 11:36-38; EX1004, 4:40; EX1005, 7:59-8:13.

s. Claim 8

Claim 8
The method of claim 1, wherein the information reflects a status of the transaction for a product stocked by the available payment accepting unit.

336. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim to a POSITA.

337. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole claim 1. *See* Section X.A.2 above.

338. Low, in view of Arora and Casey, discloses that the vending machine 120 includes inventory data 126 that corresponds to products sold and/or available, and further discloses that this inventory data may be utilized with user device 110

to display to user 102. EX1003, 5:3-9 (“Vending machine 120 may also include an product dispensing module 122 for accepting user input, such as for selecting desired items to purchase, and **inventory data 126 corresponding to products sold and/or available**. Vending machine 120 may be maintained, for example, by a retail product vendor, such as COCA COLA®.”). *Id.*, 5:36-43 (“**Inventory data 126 may correspond generally to data of purchased and purchasable products at vending machine 120. Inventory data 126 may include current stocks of products 124**, sold out products of products 124, purchase demands and/or rates of products 124, **or other desired data**. Inventory data 126 may be utilized with user device 110 to display to user 102, and/or with payment provider server 140 and vendor server 150 to provide analytics”); *id.* at 8:22-36, 9:11-12.

339. In my opinion, a POSITA would have understood that the inventory data 126 of the vending machine 120 displayed to the user 102 on the user device 110 of Low, in view of Arora and Casey, would necessarily reflect the status of the transaction for a product stocked by the available payment accepting unit. Similarly, the inventory data 126 of the vending machine 120 may indicate that there is zero inventory. Display of this inventory data 126 to the user 102 on the user device 110 of Low, in view of Arora and Casey, would reflect the non-availability of the available payment accepting unit or prompt the user to select a different product or the like, to conduct a transaction.

340. Arora discloses that the “state” of a vending machine includes stock of a product, EX1004, 23:63-24:2 (“The “state” of a vending machine, as far as a customer is concerned, generally involves aspects of the machine such as: (i) out of stock of a product; (ii) product is unsatisfactory, such as stale, broken, or the wrong temperature; (iii) incorrect product; (iv) price is incorrect; (v) change was not properly returned; (vi) machine is malfunctioning; (vii) machine is damaged; or viii) machine is not clean.”). Arora also discloses that the system of Arora is able to generate message to the customer regarding vending machines that have a requested product in current inventory. *Id.*, 24:42-62 (“available vending machine” to a customer is a vending machine that may be accessed by the customer.... If a customer requests the location of a nearby vending machine that has a particular product in inventory, the system has data in its database on the current inventory of all vending machines managed by the vending company. Thus, the system of this invention, in this embodiment, is able to generate an accurate and timely message to the requesting customer as to the location of near-by vending machines that have the requested product in current inventory.”); *see id.*, 4:41-44 (“In a simple example, a customer walks near a machine. The app, knowing the location of the customer, the machine and its current inventory, the customer’s preferences and purchasing history, including products and typical purchase times, buzzes the phone in the customer’s pocket.”).

341. A POSITA reading this disclosure of Arora would have understood that such status is a type of information that could be exchanged in the combined system of Low, in view of Arora and/or Casey, and such exchange of information would have been well understood and routine as of December 18, 2013.

t. Claim 9

Claim 9
The method of claim 1, further comprising: in addition to exchanging the information, receiving, via the one or more radio transceivers, a coupon that is targeted to the user of the mobile device based on the transaction.

342. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim to a POSITA.

343. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole claim 1. *See* Section X.A.2 above.

344. Low, in view of Arora and Casey, discloses that the payment provider service 140 includes database 146 that may include cross-promotional products and/or preferences for use in upselling products. For example, Low discloses that:

Payment provider server 140 database 146. Payment provider server 140 may maintain a plurality of user accounts in database 146, each of which may include account information associated with individual users, such as user 102. For example, database 146 may include private financial information of users of devices such as

account numbers, passwords, device identifiers, user names, phone numbers, credit card information, bank information, or other financial information which may be used to facilitate online transactions by user 102. Database 146 may also include information associated with the transaction history processing described herein. Advantageously, database 146 may be configured to interact with transaction processing application 142 on behalf of user 102 during a transaction with purchase application 112 to handle payments using account information corresponding to user 102.”)

EX1003, 7:13-28; and

Database 146 may further include data corresponding to vending machine 120 and/or products 124. For example, database 146 may include menus and/or lists of products for sale at vending machine 120, including inventory levels if desired. Additionally, database 146 may include further information, such as nutritional data corresponding to products 124. In some embodiments, database 146 may include cross-promotional products and/or preferences for use in upselling products, for example, displaying a message to user 102 after purchasing a drink such as, ‘Would you like chips with your drink.’

Id., 7:29-39.

345. Low, in view of Arora and Casey, discloses that the NICM may send out product details to the user device 110 to upsell or advertise products available on the machine. *Id.*, 2:20-25 (“In some embodiments, the NICM, the payment provider, and/or the operator of the machine may send product details to the user device to upsell or advertise products available on the NICM. The menu is then displayed on the user device, and the user selects desired item(s) for purchase.”).

346. In my opinion, a POSITA would have understood that Low, in view of Arora and Casey, teaches that a coupon that could be targeted to the user of the mobile device based on the vending transaction. EX1003, 2:2023; EX1004, 5:34-37; EX1005, 4:28-33.

347. To the extent not disclosed or rendered obvious by Low, Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim.

348. Arora discloses that an advantage of its system and method is the “ability of the vending company to sell advertising or promotions, including advertising or promotions to customer from the product manufacturers.” EX1004, 3:16-18.

349. Arora discloses that:

Once a unique machine (or a physical group of machines where each machine in the group stocks products unique to that group) is identified, the customer may initiate a

transaction related to that machine. One such transaction might be to report a problem with the machine or with a product. Another such transaction might be to report that a product is sold out of the machine. Another such transaction might be to request a different product in the machine. **Another such transaction might be to take advantage of an incentive or promotion, such as a coupon, sale or discount, points, contest entry, ability to vote, games or other products, services or features. Another such transaction might be to accumulate points or value in a loyalty program.**

Id., 5:27-39 (emphasis added).

350. Arora also discloses that “[a]nother advantage [of the system of Arora] is to provide to the customer additional information or incentives on the same screen or related screen as used for product selection.” *Id.* 5:56-59.

351. Based on these disclosures, a POSITA would have been motivated to modify the system and method of Low, in view of Arora and/or Casey ,to provide a targeted coupon in order to drive sales, without any modification to any hardware.

u. Claim 10

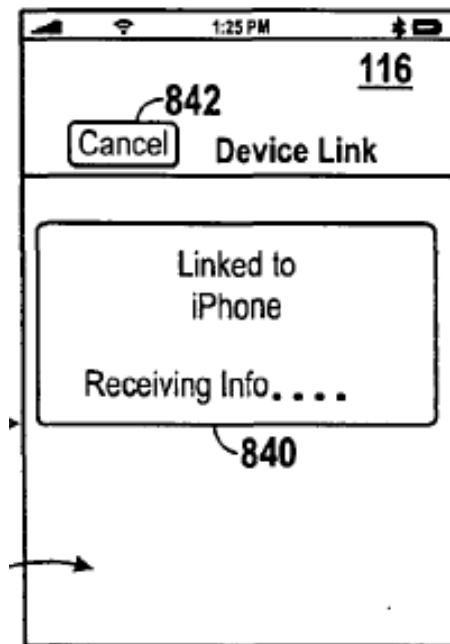
Claim 10
The method of claim 1, wherein the user interface of the mobile payment application presented after establishing via the wireless connection indicates that the wireless connection has been established with the available payment accepting unit.

352. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim 10 to a POSITA.

353. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole claim 1. *See* Section X.A.2 above.

354. Low, in view of Arora and Casey, discloses that the “[u]ser device 110 may be implemented using any appropriate hardware and software configured for wired and/or wireless communication over network 160” and information corresponding to the vending machine can be displayed on the GUI. EX1003 at 3:37-39, 4:24-27, 10:14-17.

355. A POSITA would have been motivated in view of Arora and/or Casey (incorporating Lin) to modify the system and method of Low to include as part of the purchase application 112 of Low, an indication that the wireless connection has been established with the available payment accepting unit. Such modification would have been well-understood, routine, and predictable, and a POSITA would have been motivated to make such modification if not already included in order to provide another layer of convenience to the user, particularly in view of Arora’s disclosures at FIGS. 3 and 7, which include a GUI with wide variety of icons, as well as in view of the state of the technology as of December 18, 2013. Lin (EX1006) FIG. 39 (excerpt reproduced below):



EX1006, FIG.39 (excerpted).

v. Claim element 11.1

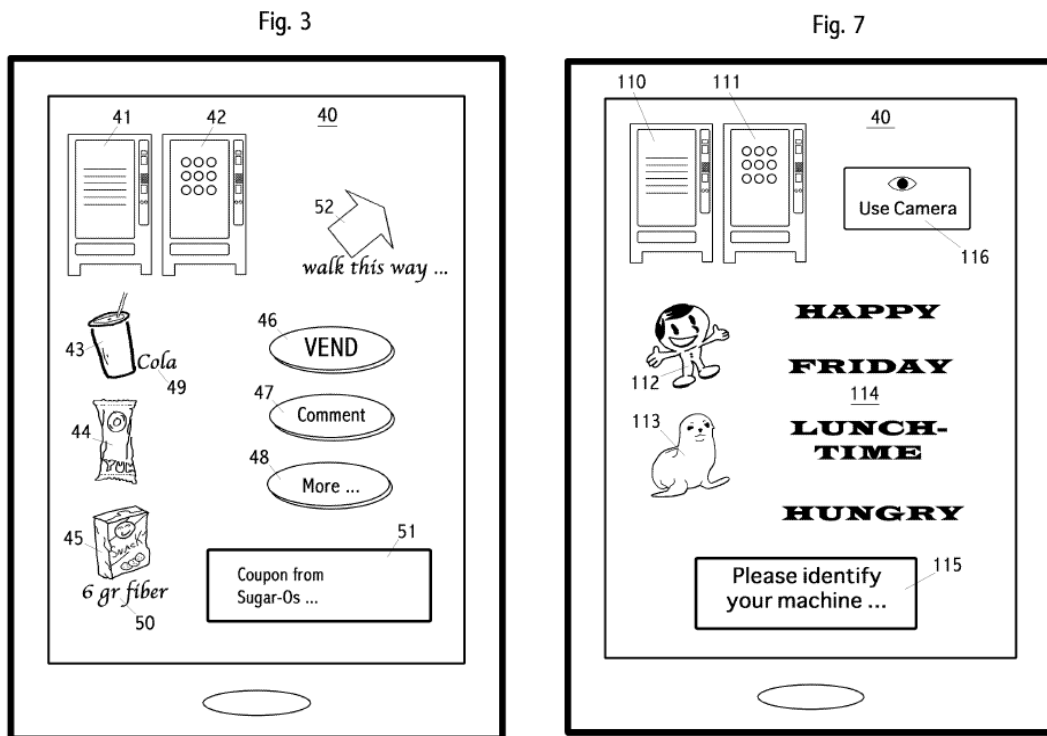
Claim [11.1]

The method of claim 1, wherein the user interface of the mobile payment application presented after establishing via the wireless connection includes:
a visual representation of available payment accepting unit;

356. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim element to a POSITA.

357. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole claim 1. *See* Section X.A.2 above.

358. As mentioned above, with respect to Claim Element [1.6], Arora discloses in FIGS. 3 and 7 exemplary screenshots of a GUI on the personal electronic device, EX1004, 11:49-50; *id.*, 11:55-56:



Id., FIG. 3, FIG. 7.

359. Arora discloses that “FIG. 3 shows an exemplary screen on a personal electronic device, 40. The screen shows two different vending machines, 41 and 42.” *Id.*, 13:47-49. Arora also discloses that “FIG. 7 shows an exemplary screen on a personal electronic device in one embodiment. This screen is used by the customer to identify a particular vending machine. The visible screen is 40. Two different vending machine types are shown, 110 and 111.” *Id.*, 19:30-34.

360. A POSITA would have been motivated, in view of Arora and/or Casey, to modify the GUI of the user device 110 of Low to display a visual indication of the one or more payment accepting units, after establishing the connection, as taught by Arora in FIGS. 3 and 7 in order to provide a better user experience to the customer and raise the level of convenience to the customer, particularly in light of the technology of smartphones such as the iPhone by December 18, 2013, which included sophisticated GUIs, including those described by Casey et al. (EX1005) and applying the technology to the field of payment systems including payment accepting units.

361. A POSITA would have been motivated, in view of Arora and/or Casey, to make this modification after establishing the wireless connection to orient the customer to the vending machine with which the customer is interacting, and might have been motivated to do so particularly in view of Arora's disclosures of various types of icons and graphical images that could simply be used to identify the machine. For example, Arora discloses that:

In another embodiment the machine has an identification graphic visible on the machine. Such a graphic might be an image of person, animal, cartoon character, mascot, logo, or meme, as examples. The graphic might have additional identification, such as the use of adjective, verb, location, or number. As a simple example, a cartoon face

of a happy boy called, ‘Freddie,’ might be used. Variations might include, ‘Weekend Freddie,’ ‘Nerd Freddie,’ ‘Florida Freddie,’ or ‘Freddie 24.’ The customer either selects a matching icon, presented by the app, or enters the information, for example, on a keyboard, or via voice.

Id., 4:60-5:3 and

FIG. 7 shows an exemplary screen on a personal electronic device in one embodiment. This screen is used by the customer to identify a particular vending machine. The visible screen is 40. Two different vending machine types are shown, 110 and 111... When a customer selects one of these two machine types, she limits the number of additional choices she has to make to identify a particular machine, including possibly no additional selection options. Two machine identification icons are shown as 112 and 113. These icons may be, ‘Freddie’ and ‘Sally Seal,’ respectively. Also shown on the display, 40, are four textual modifiers, ‘HAPPY,’ ‘FRIDAY,’ ‘LUNCH-TIME’ and ‘HUNGRY.’ In this embodiment each vending machine within a transaction range of the customer has both an icon and textual modifier.

EX1004, 19:30-46.

362. Such modification would have been routine and predictable, in view of the state of technology relating to GUIs, for example as discussed by Casey.

w. Claim element 11.2

Claim [11.2]
an indication of a prepared balance; and

363. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim element to a POSITA.

364. A POSITA would have been motivated, in view of Arora and/or Casey, to modify the user interface of the system of Low to further indicate an indication of a prepared balance in order to provide a more positive user experience by increasing the level of convenience and transparency to the user. Such modification would have been routine, particularly in view of the state of GUI technology, for example in the display of Casey, (EX1005), FIG. 5.

x. Claim element 11.3

Claim [11.3]
an affordance that when slid, indicates the initiation of the transaction.

365. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim element to a POSITA.

366. In my opinion, A POSITA would have understood that in Low, in view of Arora and Casey, the “[u]ser device 110 may be implemented using any appropriate hardware and software configured for wired and/or wireless communication over network 160. For example, in one embodiment, user device

110 may be implemented as a personal computer (PC), a smartphone, personal digital assistant (PDA), laptop computer, and/or other types of computing devices capable of transmitting and/or receiving data, such as a smartphone. Although a user device is shown, the user device may be managed or controlled by any suitable processing device. Although only one user device is shown, a plurality of user devices may be utilized.” EX1003 at 3:37-48. A POSITA would have further understood that “FIG. 4 is an exemplary system environment flowchart for an electronic payment to a non-Internet connected device according to one embodiment. FIG. 4 shows a user device 410 implementing an electronic payment to a vending machine 420. User device 410 may utilize a network 460 to communicate with a payment provider server 440 and a vendor server 450 in order to effectuate the electronic payment.” *Id.*, 11:9-16. The foregoing excerpts, among others, would have been understood by a POSITA to disclose an affordance that when slid, indicates the initiation of the vending transaction. A POSITA would have understood that the hardware and software in the user device 110 of Low, in view of Arora and Casey, is capable of initiating a vending transaction after confirming balance and when slid, particularly because the concept of sliding on a user interface was a feature of the smartphones, like the iPhone5, and not new at the time of the purported invention.

367. To the extent not already included in Low, Low in view of Arora and/or Casey, would have disclosed or rendered obvious this claim element. Arora discloses “In yet another embodiment, the app provides the customer a user interface for the machine. For example, product selection may be via the app, rather than by pressing a button on the machine.” EX1004, 5:51-54.

368. A POSITA would have understood that the GUI in the user device 110 of Low could have been customized to include various windows, buttons, sliders, and would have been motivated, in view of Arora and/or Casey, to modify the system and method of Low to include a sliding interface to initiate a vending transaction in order to avoid inadvertent initiation of transactions, as a sliding interface would require a more active user input. Such modification would have been well-known and routine, and a POSITA would have expected to succeed in such modification particularly as those features were part of the toolbox as of December 18, 2013.

y. Claim 12

Claim 12
The method of claim 11, wherein the affordance is slid in response to receiving a user input of swipe on the affordance displayed on the display of the mobile device.

369. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim element to a POSITA.

370. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole claims 1 and 11. See Section X.A.2.

371. I refer to my discussion above, regarding Claim Element [11.3]. In my opinion, a POSITA would have understood that the hardware and software in the user device 110 of Low, in view of Arora and Casey, was capable of displaying information regarding the balance in the customer account and receive a user input such as a swipe of the user device 110 display to purchase an item, particularly because the concept of “sliding” on a user interface was a feature of smartphones by December 18, 2013 and not new at the time of the purported invention, EX1005, FIG. 3.

z. Claim 13

Claim 13
The method of claim 1, wherein the predefined radio transmissions are broadcasted by the one or more payment accepting units indicating status of the one or more payment accepting units.

372. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim to a POSITA.

373. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole claim 1. See Section X.A.2 above.

374. I refer to my discussion above with respect to Claim Element [1.3] and incorporate that analysis here by there reference with respect to claim 13.

aa.Claims 14, 21, and 28

Claim 14	Claim 21	Claim 28
The mobile device of claim 13, wherein the one or more payment operated machines includes a laundromat washer or dryer, a vending machine, a parking meter, a toll booth, an arcade game, a kiosk, a photo booth, a toll booth, or a ticket dispensing machine.	The mobile device of claim 15, wherein the one or more payment operated machines include a laundromat washer or dryer, a vending machine, a parking meter, a toll booth, an arcade game, a kiosk, a photo booth, a toll booth, or a ticket dispensing machine.	The non-transitory computer readable storage medium of claim 22, wherein the one or more payment operated machines include a laundromat washer or dryer, a vending machine, a parking meter, a toll booth, an arcade game, a kiosk, a photo booth, a toll booth, or a ticket dispensing machine.

375. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim to a POSITA.

376. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole claims 1, 15, and 22. See Section X.A.2.

377. Each of Low, Arora, and Casey disclose vending machines. EX1003, 1:29-33; EX1004, Abstract; EX1005, 16:36-41. In addition, Low also discloses kiosks as a device that allows a consumer to make an electronic purchase. EX1003, 1:29-33. Low also discloses other examples including a terminal. *Id.*, 4:57-5:9.

bb. Claim 16

Claim 16

The mobile device of claim 15, wherein the one or more output devices of the mobile device include at least one of: one or more speakers, one or more light emitting diodes (LEDs), and a vibration mechanism.

378. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim to a POSITA.

379. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole claim 15. *See* Section X.A.2 above.

380. Low, in view of Arora and Casey, discloses that a user device may be a smartphone. EX1003, 3:37-44 (“User device 110 may be implemented using any appropriate hardware and software configured for wired and/or wireless communication over network 160. For example, in one embodiment, user device 110 may be implemented as a personal computer (PC), a smartphone, personal digital assistant (PDA), laptop computer, and/or other types of computing devices capable of transmitting and/or receiving data, such as an IPAD® from APPLE®.”).

381. Arora discloses the personal user device may include audio output, haptics, “and the like.” EX1004, 26:65-27:6 (“Personal electronic device—This is a smart phone, tablet, PDA, laptop, or similar electronic device that comprises a user interface (UI), a processor and memory capable of executing applications (apps), and wireless electronic communications. **User interfaces may comprise any combination of display**, video projection, touchscreen, keyboard, stylus,

audio input, audio output, voice input, voice output, voice recognition, haptics, accelerometer, vision, vision recognition, motion recognition, face recognition, and the like.”).

382. Casey discloses the mobile device 10 may be an iPhone. EX1005, 4:1-3 (“By way of example, the electronic device 10 may be a model of an iPod® or iPhone®, or a derivative thereof, available from Apple Inc. of Cupertino, Calif”). Casey further discloses an LED display. *Id.*, 4:36-39 (“The display 24 may be any type of display Such as a liquid crystal display (LCD), a light emitting diode (LED) display, an organic light emitting diode (OLED) display, or other suitable display.”), and various audio input and output structures such as microphones. *Id.*, 5:44-56 (“**The electronic device 10 may also include various audio input and output structures 40 and 42.** For example, the audio input structures 40 may include one or more microphones for receiving Voice data from a user. **The audio output structures 42 may include one or more speakers for outputting audio data, such as data received by the device 10 over a cellular network.** Together, the audio input and output structures 40 and 42 may operate to provide telephone functionality. Further, in Some embodiments, the audio input structures 40 may include one or more integrated speakers serving as audio output structures for audio data stored on the device 10. For example, the integrated speakers may be used to play music stored in the device 10.”).

cc. Claim element 17.1

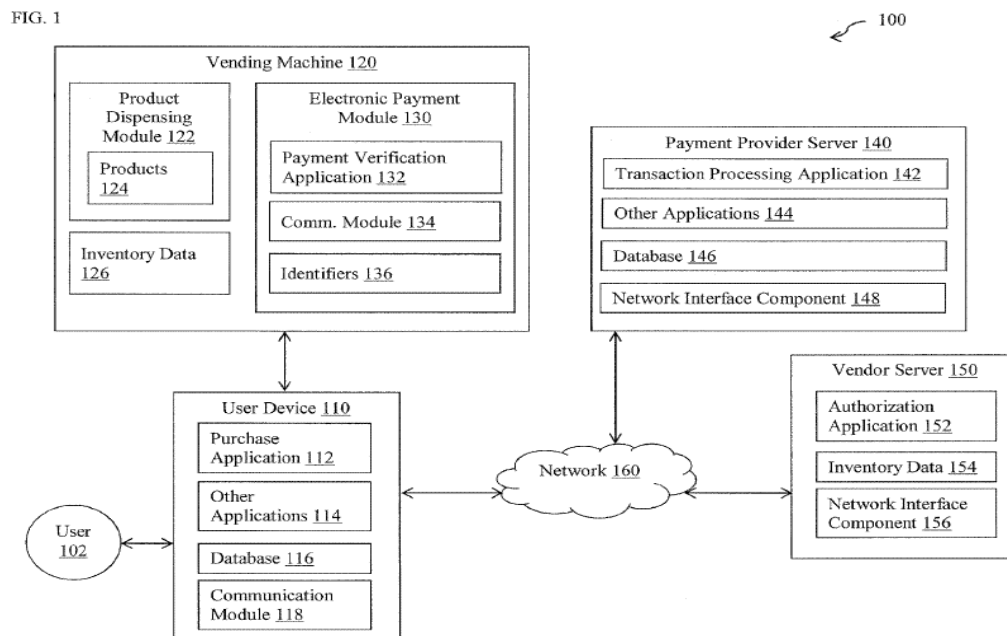
Claim element 17.1

The mobile device of claim 15, the mobile payment application on the mobile device is configured to communicate with a payment module coupled with an internal interface of the available payment accepting unit;

383. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim element to a POSITA.

384. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole claim 15. *See* Section X.A.2 above.

385. Low at Figure 1 (reproduced below) shows purchase application 112 of user device 110, as well as electronic module 130 of vending machine 120.



Id., FIG 1.

386. Low, in view of Arora and Casey, discloses that the “[p]urchase application 112 may be used, for example, to provide a convenient interface to permit user 102 to select, purchase, and dispense products for sale at a vending machine 120. For example, in one embodiment, purchase application 112 may be implemented as a downloadable application having a user interface enabling the user to purchase products for sale at vending machine 120.” EX1003, 3:57-4:1.

387. Low, in view of Arora and Casey, discloses that the vending machine 120 includes an electronic payment module 130. EX1003, 4:64-5:3. Low also discloses that the electronic payment module 130 enables the user 102 to make payments to purchase products. *Id.*, 5:44-6:16. Low further discloses that the “communication module 118 of the user device 110 connects to the communication module 134 of the electronic payment module 130. *Id.*, 10:7-10. *See id.*, FIGS. 1, 3. A POSITA would have understood that the communication module 118 and the electronic payment module 134 could be software and/or hardware.

388. A POSITA reading Low, in view of Arora and Casey, would have immediately recognized that such disclosures disclose claim element 17.1.

dd. Claim element 17.2

Claim element 17.2
the mobile device sends a transmission to the payment module via the one or more radio transceivers of the mobile device in conjunction with the transaction;

the available payment accepting unit sends the transmission to the payment module in conjunction with the transaction; and

the mobile device obtains, via the one or more radio transceivers, the information from the payment module based on the transmission.

389. It is my opinion that, to the extent the Board does not find Claim Element [17.2] to be indefinite, Low in view of Arora and/or Casey would have disclosed or rendered obvious (1) the user device 110 of Low sending a transmission to the payment module via the one or more radio transceivers of the user device 110 in conjunction with the transaction; and (2) the user device 110 obtaining, via the one or more radio transceivers, the information from the payment module based on the transmission.

390. It is also my opinion that, to the extent the Board does not find Claim Element [17.2] to be indefinite, Low in view of Arora and/or Casey would have disclosed or rendered obvious the available NICM of Low sending certain transmissions to the payment module in conjunction with the transaction, but not the same transmission that would have been sent by the user device 10 to the payment module.

391. Low, in view of Arora and Casey, would have disclosed or rendered obvious as a whole claim 15. *See* Section X.A.2 above. I also incorporate my above analysis with respect to Claim Element [17.1] as if fully set forth herein.

392. Claim Element [17.2] generally specifies sending and receiving a generic transmission between the components of the devices, albeit the transmissions specified in this claim element, specifically **‘the available payment accepting unit sends the transmission to the payment module in conjunction with the transaction’** does not make sense in view of the ’296 Patent specification. To the extent the Board finds this claim element not to be indefinite, Low, in view of Arora and Casey, would have rendered obvious to a POSITA this additional claim element.

393. As discussed above, Low discloses that the electronic payment module 130 includes at least one communication module 134 adapted to communicate with the communication module 118 of the user device 110, which may include various types of wired and/or wireless short-range communication devices and communication protocols. EX1003, 6:9-16. Low, in view of Arora and Casey, discloses that the purchase application 112 “may interface with a corresponding module at vending machine 120.” *Id.*, 4:5-14, 6:3-9. A POSITA would have understood that the transmission could be to and from the user device 110 and the electronic payment module 130. EX1003, FIG 1, 6:11-27.

ee. Claim 18

Claim 18
The mobile device of claim 15, wherein:

the wireless connection is established via a first transceiver of the one or more transceivers; the information is exchanged via a second transceiver of the one or more transceivers; and the first transceiver is different from the second transceiver.
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394. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim to a POSITA.

395. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole claim 15. *See* Section X.A.2 above.

396. Low, in view of Arora and Casey, discloses that the “user device 110 includes at least one communication module 118 adapted to communicate with vending machine 120 and/or network 160 including payment provider server 140 and/or vendor server 150” and describes various types of “wired and/or wireless network communication devices. 4:47-56. Low discloses the “electronic payment module 130 includes **at least one communication module 134 adapted to communicate with user device 110,**” *id.* 6:9-17.

397. To the extent Low does not disclose this claim, a POSITA would have found it obvious to modify the user device 110 of Low, in view of Arora and Casey, to have multiple different transceivers, where one is used to establish a connection and another is used to exchange information between the mobile device and payment accepting unit for various reasons. One reason would be to reduce interference between two different communication protocols in order to ensure

smooth and efficient communications, even when multiple wireless functions are active at the same time. Another motivation is for an added layer of security, and another to optimize energy usage. A. A POSITA would have had a reasonable expectation of success as smartphones and other mobile devices as of December 18, 2013 were already equipped with multiple transceivers, including various communication modalities, including for example, cellular, WiFi, Bluetooth, and NFC.

ff. Claim 19

Claim 19
The mobile device of claim 15, wherein the one or more payment accepting units further comprise one or more of: parking meters, toll booths, laundromat washers, laundromat dryers, arcade games, kiosks, photo booths, toll booths, and/or transit ticket dispensing machines.

398. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim to a POSITA.

399. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole claim 15. *See* Section X.A.2 above.

400. I incorporate my analysis above, with respect to Claims 14, 21, and 28, as if fully set forth herein. The only difference between claims 14, 21, and 28 with respect to the additional subject matter recited in claim 19 is that this claim lists examples of “payment accepting units,” while claims 14, 21, and 28 list examples of “payment operated machines,” but otherwise contain the same list, including the

duplicate recitation of the “toll booths.” A POSITA would have found the subject matter recited in claim 19 to be obvious in view of Low, Arora, and Casey.

gg.Claim 20

Claim 20
The mobile device of claim 15, wherein the wireless connection between the mobile device and the available payment accepting unit is a Bluetooth connection, a Bluetooth Smart connection, a Bluetooth Low Energy connection, a near-field communication connection, an Ultra Wideband connection, a radio frequency identification connection, an infrared wireless connection, and/or an induction wireless connection.

401. It is my opinion that Low in view of Arora and Casey would have disclosed or rendered obvious this claim to a POSITA.

402. Low in view of Arora and Casey would have disclosed or rendered obvious as a whole claim 15. *See* Section X.A.2 above.

403. Low, in view of Arora and Casey, discloses that, “[a]ccording to various embodiments, a consumer device, such as a smartphone or computing tablet, communicates with a non-Internet connected unmanned device/machine via wireless communication, such as Bluetooth or NFC (Near Field Communication) means, for making a payment to the device utilizing a payment provider.” EX1003, 2:11-16. Low also discloses various communication means by the user device 110, including Bluetooth. *Id.*, 2:38-39, 4:45-56; 10:10-14.

404. Arora discloses that the communication may be Bluetooth or NFC, among other wireless communication methods. EX1004, 3:64-4:7; 27:52-67.

405. Casey discloses that “[t]he electronic device 10 also may communicate with other devices using short-range connections, such as Bluetooth and near field communication. By way of example, the electronic device 10 may be a model of an iPod® or iPhone®, or a derivative thereof, available from Apple Inc. of Cupertino, Calif.” EX1005, 3:65-4:3.

hh. Claim 25

Claim 25
The non-transitory computer readable storage medium of claim 24, wherein the information at least includes an amount of the completed transaction, and the instructions further cause the mobile device to send at least the amount of the completed transaction to a server.

406. It is my opinion that Low in view of Arora and Casey would have disclosed or rendered obvious this claim to a POSITA.

407. Low in view of Arora and Casey would have disclosed or rendered obvious as a whole, claims 22 and 24. *See* Section X.A.2 above.

408. I refer to my discussion above, with respect to claims 4, 22, and 24, and incorporate the same here as if fully set forth herein.

XI. Other Evidence Relevant to Obviousness

409. As I noted above, I understand that the obviousness inquiry requires me to consider whether there is any “objective evidence of non-obviousness.” Petitioners’ counsel has informed me that this type of evidence helps guard against what the courts have called “hindsight bias” when looking backwards in time at a

purported invention. Counsel has informed me that the types of evidence that can fall into this category are, for example, commercial success, long-felt but unmet need, failure by others to solve similar problems facing a POSITA, or other factors that indicate non-obviousness.

410. Counsel has also informed me that for any such evidence to be applicable, the evidence must also bear some “nexus” to a claim, and in particular, to what is purportedly novel about the claim. Any evidence of non-obviousness that has been presented so far has not altered my opinions on obviousness.

411. I am not aware of any secondary consideration evidence, or any other evidence that might affect any of my opinions in this document. I reserve the right to reconsider my opinions, as set forth above, if any further such evidence is brought to my attention.

XII. Claim Indefiniteness

A. Claim 17

Claim 17
The mobile device of claim 15, the mobile payment application on the mobile device is configured to communicate with a payment module coupled with an internal interface of the available payment accepting unit; the mobile device sends a transmission to the payment module via the one or more radio transceivers of the mobile device in conjunction with the transaction;

the available payment accepting unit sends the transmission to the payment module in conjunction with the transaction; and

the mobile device obtains, via the one or more radio transceivers, the information from the payment module based on the transmission.

412. It is my opinion that claim 17 is indefinite because, when read in light of the specification, it does not, and would not have at the time of the alleged invention, informed a POSITA about the scope of the invention with reasonable certainty.

413. In reading the entirety of claim 17, including in view of claim 15 on which it depends, a POSITA will find the claim recites contradictory limitations that are on their face inconsistent with '296 Patent specification.

414. In particular, the claim recites "...the mobile device sends **a transmission** to the payment module via the one or more radio transceivers of the mobile device in conjunction with the transaction; [and] the available payment accepting unit sends **the transmission** to the payment module in conjunction with the transaction..." EX1001, 49:9-15 (emphasis added). These limitations intrinsically conflict with each other and, therefore, do not inform a POSITA about the scope of the alleged invention of claim 17 with reasonable certainty, for at least two reasons: (1) the "**transmission**" is sent by the mobile device to the "payment module," and not to the "available payment accepting unit," so the "available payment accepting unit" cannot possibly send that same **transmission** to "the

payment module”; and (2) the ’296 Patent specification does not provide any teaching that would suggest to a POSITA that the “payment accepting unit” receives any transmission from the mobile device, which it could then send to the “payment module.” *See* EX1001, FIGS 5, 6, 7, 8A-G.

415. In fact, there is no disclosure whatsoever in the ’296 Patent that the payment accepting unit has the capability to receive any transmission from the mobile device—it is the payment module retrofitted to the payment accepting unit that has the communication capabilities.

XIII. Conclusion

416. In signing this declaration, I recognize that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I also recognize that I may be subject to cross-examination in the case and that cross-examination will take place within the United States. If cross-examination is required, I will appear for cross-examination within the United States during the time allotted.

417. I hereby declare that all statements made herein are of my own knowledge and are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Executed on this 15th day of August, at Glen Mills, Pennsylvania.



Safwan Zaheer