

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

Patent 11,481,772

**DECLARATION OF SAFWAN ZAHEER IN SUPPORT OF PETITION
FOR POST-GRANT REVIEW OF U.S. PATENT NO. 11,481,772**

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EX1012
U.S. Patent No. 11,481,772

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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. 11,481,772 (“the ’772 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 1-20 of the '772 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:

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Ground	Statute(s)	Challenge	Challenged Claim(s)
1	§101	Subject Matter Eligibility	1-20
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))	1-20

IV. Materials Considered

14. In formulating my opinions, I have relied upon my training, knowledge, and experience that are relevant to the ’772 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. 11,481,772 to Patel et al. (“’772 Patent”)
1002	Prosecution History of the ’772 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 '772 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 '772 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 '772 Patent as I perceive a POSITA would have understood them as of December 18, 2013, after reading the entire '772 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 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 patent 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 2-12, 14, and 16-20 of the '772 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 '772 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.

VI. Overview of the Alleged Invention

43. The '772 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, 1:39-41.

44. The '772 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.*, 6:1-6. The '772 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.*, 1:54-65.

45. The ’772 Patent acknowledges that “[v]ending machines (or ‘automatic retailing’ machines), in the broadest sense, have been around for thousands of years.” *Id.*, 1:45-46. However, the ’772 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.* 2:10-11.

46. The ’772 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., 9:65-10:16.

47. The '772 Patent includes twenty claims, including three independent claims, each directed to substantially the same subject matter in a method, a system, and a computer-readable storage medium.

48. Independent claim 1 of the '772 Patent recites:

1. [1.0] A method of presenting representations of 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] identifying one or more payment accepting units in proximity to the mobile device that are available to accept payment from a mobile payment application executing on the mobile device, [1.3] the identifying based at least in part on an identifier corresponding to 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 the 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 communication path including the mobile device and the available payment accepting unit of the one or more payment accepting units;

[1.9] after establishing the wireless communication path, 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] after exchanging the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device.

Id., 47:2-41 (identifying bracketed numbers added).

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

50. Both independent claims 13 and 15 recite the same elements [1.2]-[1.11]. However, instead of claiming a process, Claim 13 claims an apparatus, *Id.*, 48:37-49:9 (claim 13 stating in part “A mobile device comprising...”), while Claim 15 claims a non-transitory computer readable storage medium, *id.*, 49:17-50:12 (claim 15 stating in part “A non-transitory computer readable storage medium...”).

VII. Technology Background

51. Years before December 18, 2013 (for reference, the first iPhone was released in June 2007), mobile devices such as smart phones and tablet devices were widespread and well known and used features and technologies claimed by the '772 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.

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

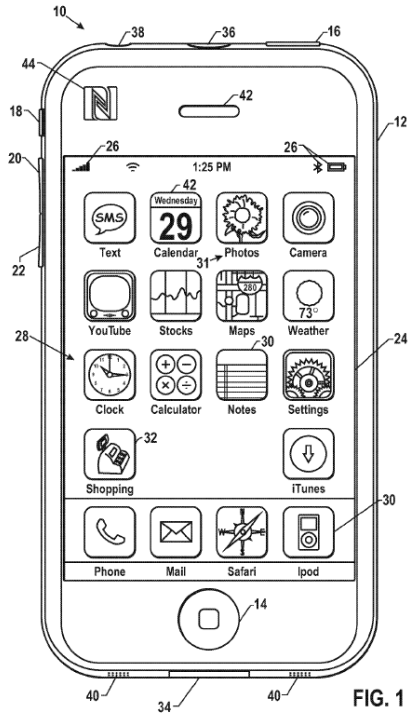


FIG. 1

Id., FIG. 1.

53. 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, which GUI could 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.

54. 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.

55. 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].

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

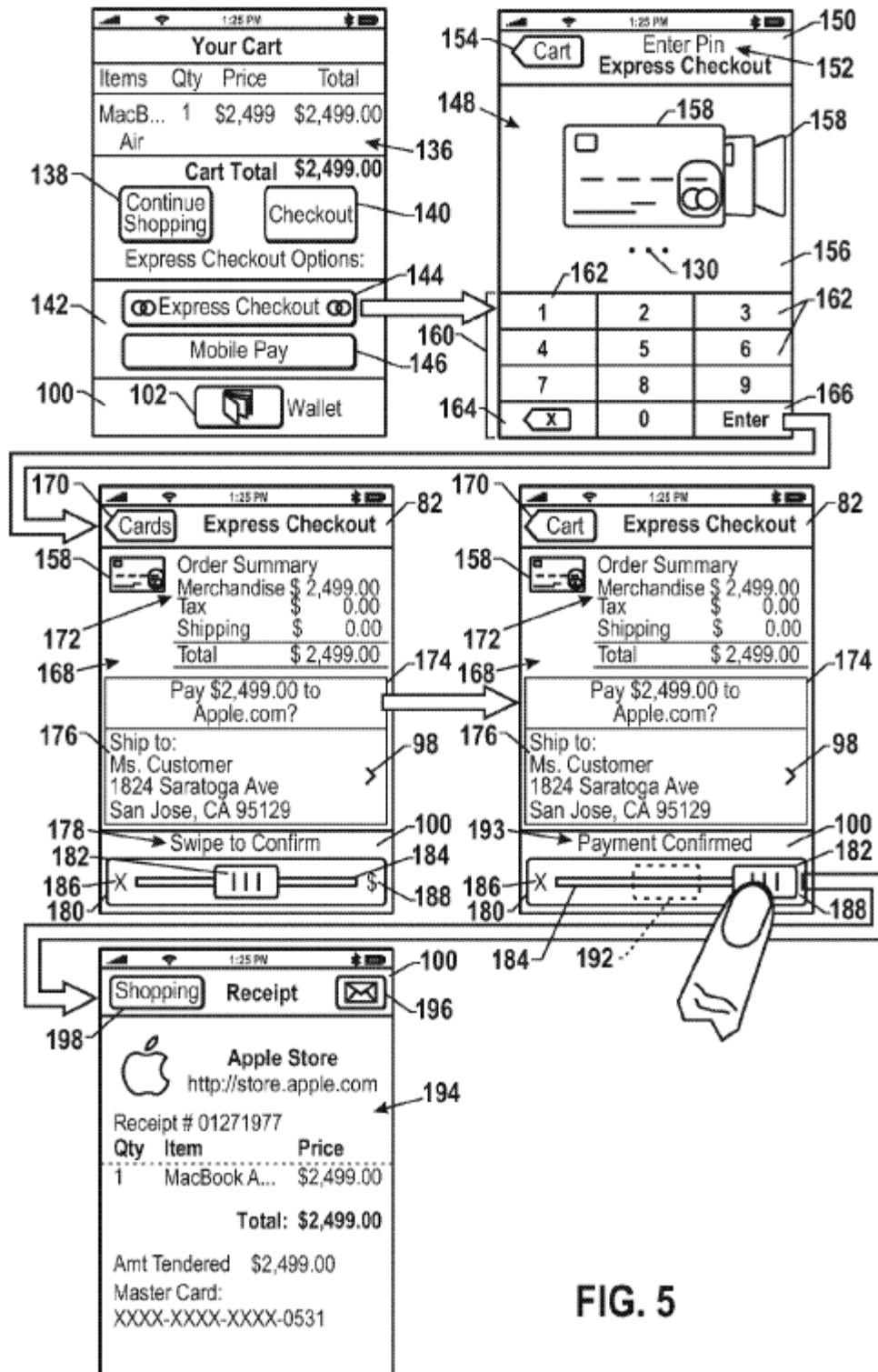


FIG. 5

Id., FIG. 5.

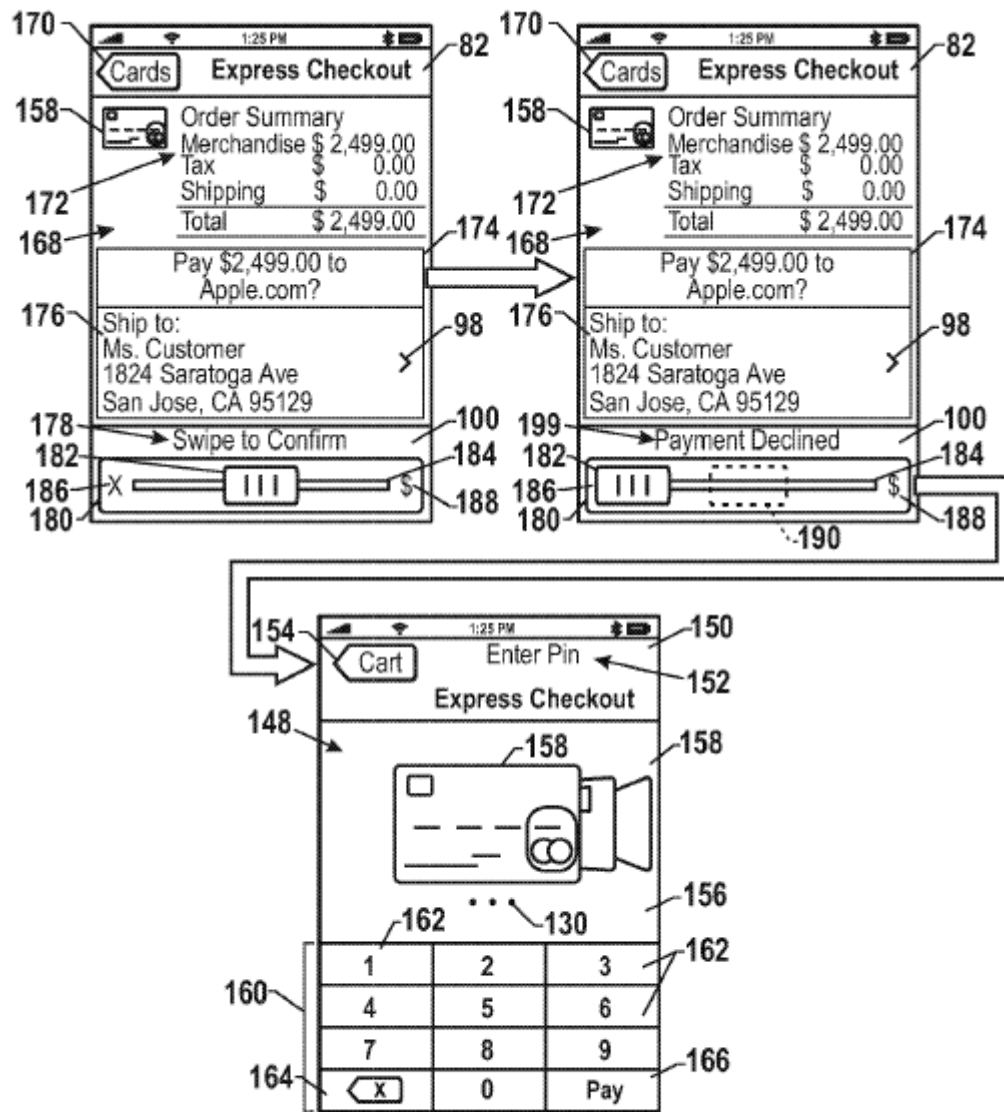


FIG. 6

Id., FIG. 6.

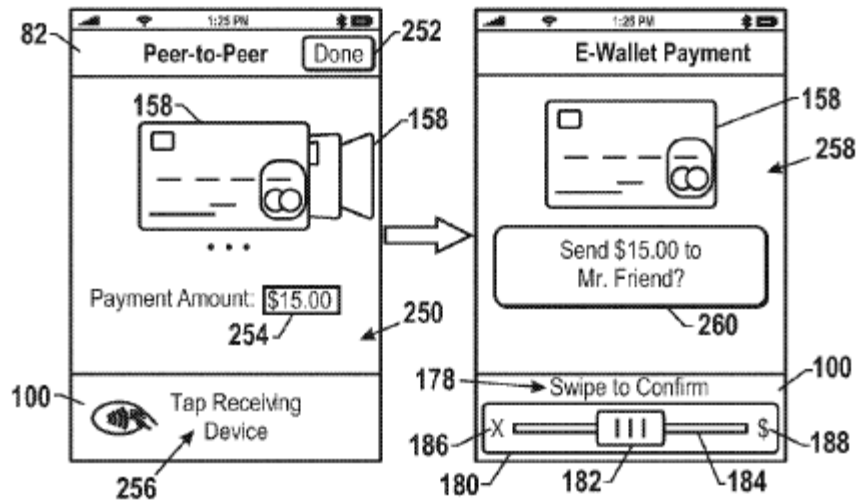


FIG. 11

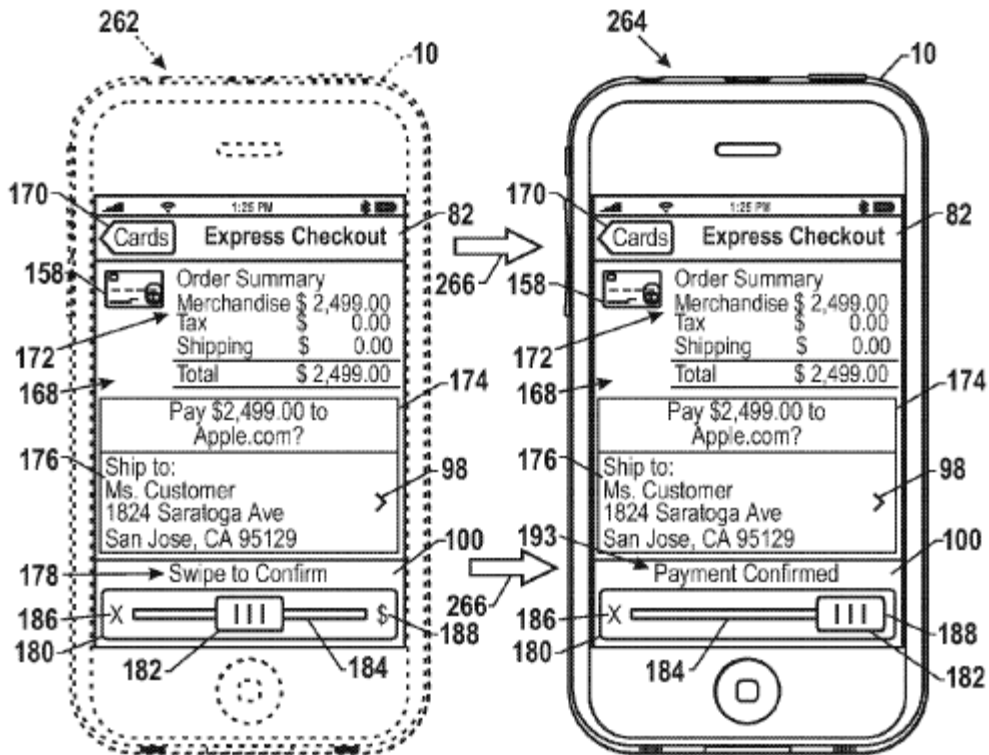


FIG. 12

Id., FIGs. 11, 12.

57. Furthermore, the process of establishing a connection between two devices via a wireless communication path through radio transceivers, as in '772 Patent Claim Elements [1.8]-[1.11] (and the equivalent Patent Claim Elements in claims 13 and 15) 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

58. I will now review the prior art upon which I rely to show that the subject matter of the '772 Patent claims would have been obvious to a POSITA, at least by the '772 Patent's earliest claimed priority date of December 18, 2013, and certainly by the '772 patent's actual filing date of March 14, 2022.

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

59. 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.

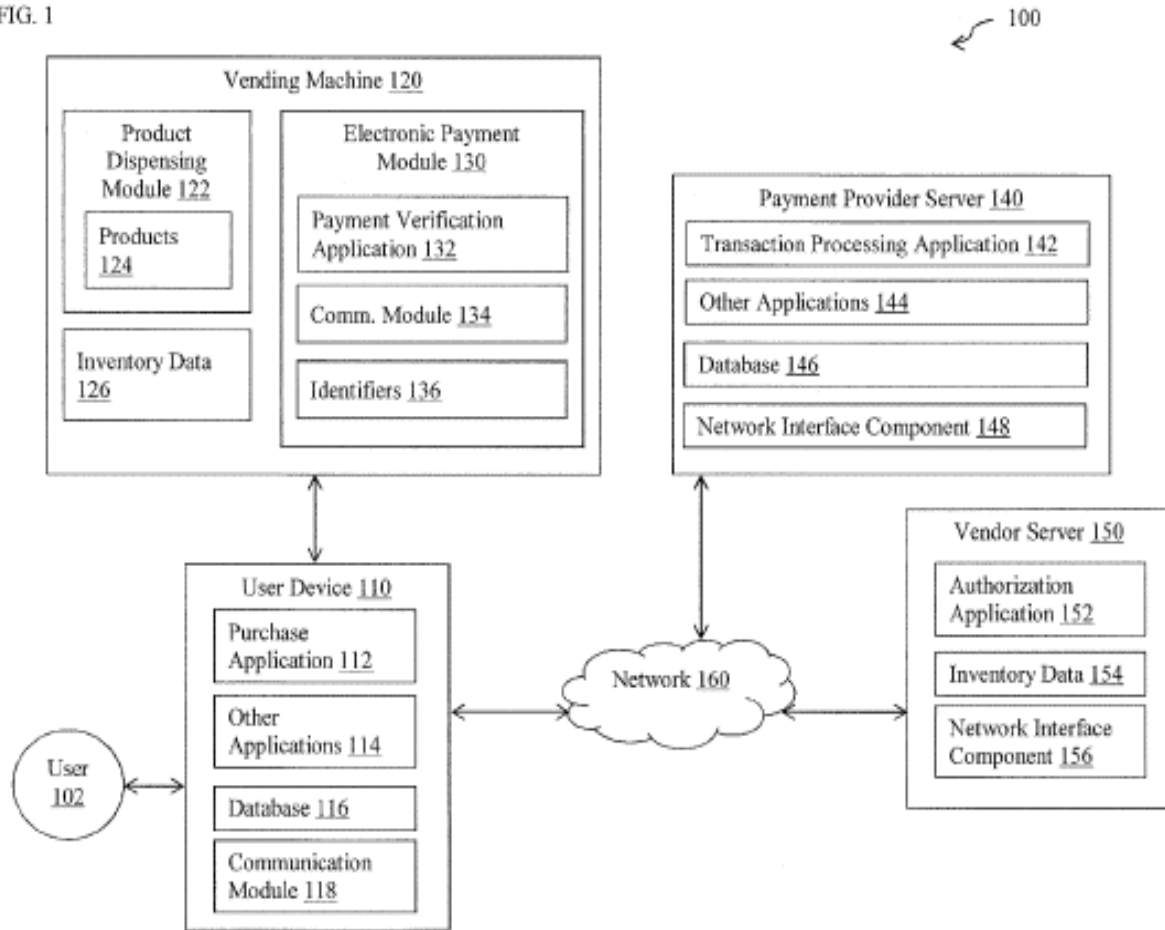
60. Low is directed to systems and methods for facilitating wireless electronic payments between a mobile device and a non-Internet connected machine (“NICM”), including vending machines. EX1003, Abstract, FIG. 1. Low describes that “[i]n addition to traditional online purchases/payments[,] and more recently to payments made through smart phones, 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.

61. 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.*

62. 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.

63. A POSITA would have understood that any of the conventional communication protocols described in the '772 Patent could have been used for any communication disclosed in Low. A POSITA would have also understood that any 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 '772 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. Further, such modifications would have been standard design choices at the time of the alleged invention, merely requiring the use of known elements in 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)

64. 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.

65. 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,

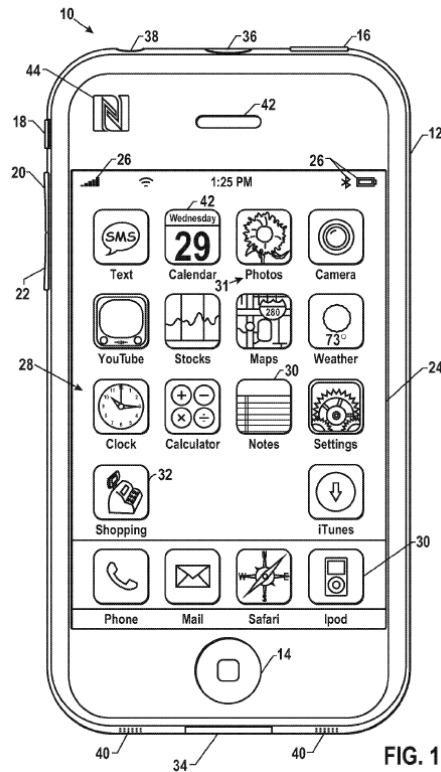
Abstract. Arora discloses a mobile device system for communicating with a vending machine over local or remote wireless technologies. *Id.*, 4:2-7. Arora discloses that the mobile device utilizes either local (Bluetooth, WiFi) or cellular wireless technology to detect proximity to a local machine and initiate communications. *Id.*, 4:15-22, 4:40-44, 12:34-13:7. “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 describe the transaction. *Id.*, 12:37-13:5, 18:38-48.

66. 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, 27:52-67. 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)

67. 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.

68. 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, Abstract, 1:5-9, 3:10-12, such as the GUI shown in FIG.1.

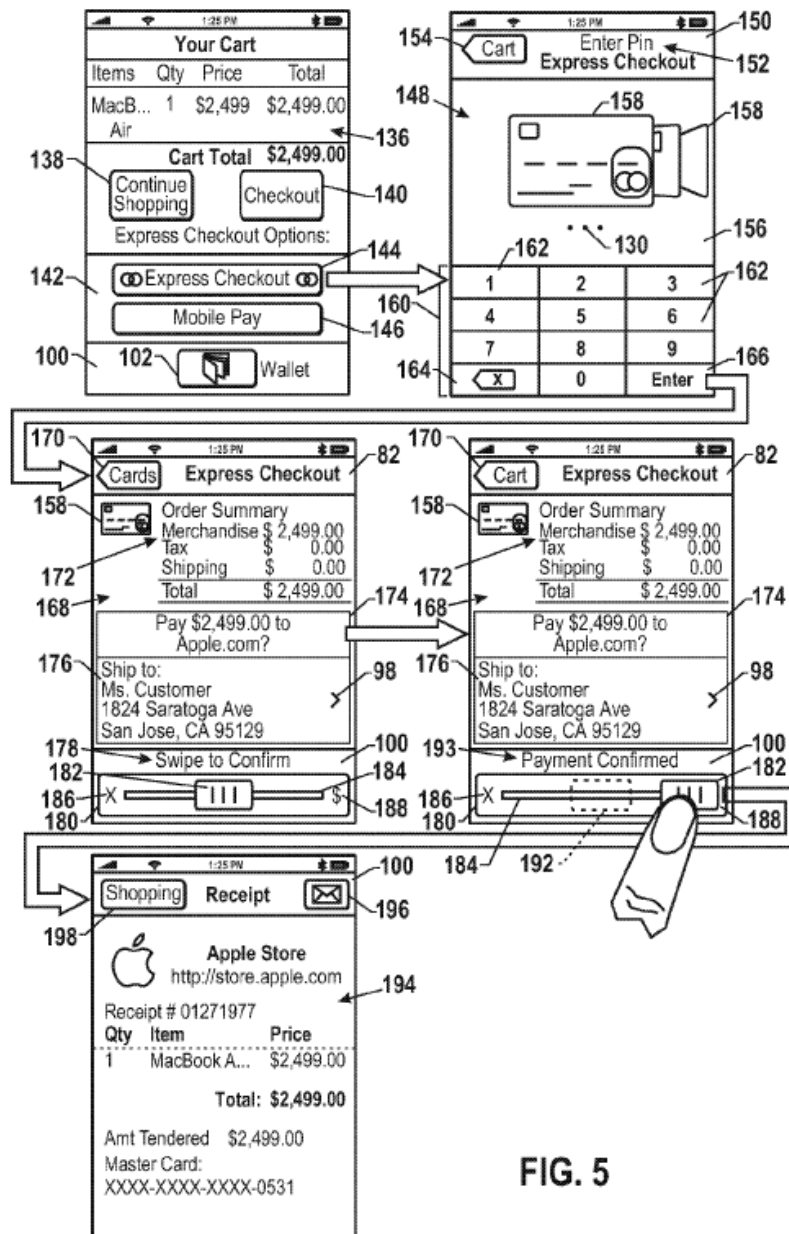


Id., FIG.1.

69. 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.

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



Id., FIG.5.

71. Casey also discloses that the electronic device “may communicate with other devices using short-range connections, such as Bluetooth and near field communications.” *Id.*, 3:65-4:3. Casey further discloses that the disclosed electronic device may be an iPod or iPhone, or a derivative thereof. *Id.*, 4:1-4.

72. 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 Lin is to be considered part of the Casey reference.

IX. Subject Matter Eligibility of the Challenged Claims

73. I understand that each of the Challenged Claims are directed to identifying a merchant 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.

74. It is my opinion that the claims of the '772 Patent are directed to using well-understood, routine, and conventional wireless technology and graphical user interfaces of a mobile device (such as a smart phone or computer), operating as such devices, according to well-understood, routine, and conventional methodologies to perform the steps of (1) identifying a payment accepting unit, (2) displaying an interface on 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 '772 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.*, 8:59-9:10. The '772 Patent, for instance, references the iPhone 5. *Id.*, 20:64. The '772 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, 8:62-65.

75. 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.

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

77. 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 '772 Patent side-by-side, with the bracketed numbering I will use when referring to those elements:

a. Independent Claims 1, 13, and 15 as a whole.

Claim 1	Claim 13	Claim 15
<p>[1.0] 1. A method of presenting representations of payment accepting unit events, comprising:</p> <p>[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:</p> <p>[1.2] identifying one or more payment accepting units in proximity to the mobile device that are available to accept payment from a mobile payment application executing on the mobile device,</p> <p>[1.3] the identifying based at least in part on an identifier corresponding to the one or more payment accepting units,</p> <p>[1.4] wherein the one or more payment accepting units are payment operated machines that</p>	<p>[13.0] 13. A mobile device, comprising:</p> <p>[13.1] 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:</p> <p>[13.2] identifying one or more payment accepting units in proximity to the mobile device that are available to accept payment from a mobile payment application executing on the mobile device,</p> <p>[13.3] the identifying based at least in part on an identifier corresponding to the one or more payment accepting units,</p> <p>[13.4] wherein the one or more payment accepting units are payment operated machines that</p>	<p>[15.0] 15. A non-transitory computer readable storage medium storing one or more programs, [15.1] 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:</p> <p>[15.2] identifying one or more payment accepting units in proximity to the mobile device that are available to accept payment from a mobile payment application executing on the mobile device,</p> <p>[15.3] the identifying based at least in part on an identifier corresponding to the one or more payment accepting units,</p> <p>[15.4] wherein the one or more payment accepting units are payment operated machines that</p>

<p>accept payment for dispensing of products and/or services;</p> <p>[1.5] displaying a user interface of the 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</p> <p>[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</p> <p>[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;</p> <p>[1.8] establishing via the one or more radio transceivers a wireless communication path including the mobile device and the available</p>	<p>accept payment for dispensing of products and/or services;</p> <p>[13.5] displaying a user interface of the mobile payment application on the display of the mobile device, [13.6] the user interface being configured to display a visual indication of the one or more payment accepting units and</p> <p>[13.7.1] 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</p> <p>[13.7.2] (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;</p> <p>[13.8] establishing via the one or more radio transceivers a wireless communication path including the mobile device and the available</p>	<p>accept payment for dispensing of products and/or services;</p> <p>[15.5] displaying a user interface of the 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</p> <p>[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</p> <p>[13.7.2] (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;</p> <p>[15.8] establishing via the one or more radio transceivers a wireless communication path including the mobile device and the available</p>
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<p>payment accepting unit of the one or more payment accepting units;</p> <p>[1.9] after establishing the wireless communication path, enabling user interaction with the user interface of the mobile payment application to complete the transaction;</p> <p>[1.10] exchanging information with the available payment accepting unit via the one or more radio transceivers, in conjunction with the transaction; and</p> <p>[1.11] after exchanging the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device.</p>	<p>payment accepting unit of the one or more payment accepting units;</p> <p>[13.9] after establishing the wireless communication path, enabling user interaction with the user interface of the mobile payment application to complete the transaction;</p> <p>[13.10] exchanging information with the available payment accepting unit via the one or more radio transceivers, in conjunction with the transaction; and</p> <p>[13.11] after exchanging the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device.</p>	<p>payment accepting unit of the one or more payment accepting units;</p> <p>[15.9] after establishing the wireless communication path, enabling user interaction with the user interface of the mobile payment application to complete the transaction;</p> <p>[15.10] exchanging information with the available payment accepting unit via the one or more radio transceivers, in conjunction with the transaction; and</p> <p>[15.11] after exchanging the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device</p>
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78. In my opinion, each of Claims 1, 13, and 15, each taken as a whole would have been well-understood, routine, and conventional to a POSITA as of December 18, 2013.

79. Each of Independent Claims 1, 13, and 15 are performed on a generic, conventional mobile device such as a smart phone, which the '772 Patent describes includes an iPhone 5. EX1001, 20:64. 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.

80. None of Claims 1, 13, or 15 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 the steps of [1.2-1.11], [13.2-13.11], and [15.2-15.11] as a whole, these steps (individually and together) describe activities that would have been well-understood, conventional, or 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 “identifying” 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

communication path, were well-understood, routine, and conventional. In my opinion, none of Claims 1, 13, and 15, read as a whole, convey to a POSITA any activities that were not already well-understood, routine, and conventional as of December 18, 2013.

81. Looking at each of the steps of the Claims 1, 13, and 15, 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], [13.0]-[13.1], and [15.0]-[15.1]

Claim 1	Claim 13	Claim 15
[1.0] 1. A method of presenting representations of 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:	[13.0] 13. A mobile device, comprising: [13.1] 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:	[15.0] 15. A non-transitory computer readable storage medium storing one or more programs, [15.1] 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:

82. In my opinion, each of Claim Elements [1.0]-[1.1], [13.0]-[13.1], and [15.0]-[15.1] were well-understood, routine, and conventional as of December 18, 2013.

83. Claim Element [1.0] describes a “method of presenting representations of 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 [13.1] and [15.1] also cite to these components. These were necessary and conventional components of a mobile device. *See, See infra*, Section X at Ground 2, Element [1.0]-[1.1], [13.0]-[13.1], and [15.0]-[15.1].

84. Similarly with Claim Elements [13.0]-[13.1], memory was a conventional and necessary component of a mobile device described at least in the prior art and well-understood, routine, and conventional to a POSITA. *See infra*, Section X at Ground 2, Element [1.0]-[1.1], [13.0]-[13.1], and [15.0]-[15.1].

85. Claim [15.0] adds a “non-transitory computer readable storage medium storing one or more programs.” The purpose of storage on a mobile device includes to store 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 elements [15.0]-[15.1].

c. Claim Elements [1.2], [13.2], [15.2]

Claim 1	Claim 13	Claim 15
[1.2] identifying one or more payment accepting units in proximity to the mobile device that are available to accept payment from a mobile payment application executing on the mobile device,	[13.2] identifying one or more payment accepting units in proximity to the mobile device that are available to accept payment from a mobile payment application executing on the mobile device,	[15.2] identifying one or more payment accepting units in proximity to the mobile device that are available to accept payment from a mobile payment application executing on the mobile device,

86. In my opinion, each of Claim Elements [1.2], [13.2], and [15.2] was well-understood, routine, and conventional as of December 18, 2013.

87. Claim Elements [1.2], [13.2], and [15.2] describe a mobile application executing on the mobile device (with those conventional components discussed above) performing the step of identifying nearby available devices. To a POSITA in 2013, it would have made no difference that a mobile application was a mobile “payment” application, or that the other device was a “payment accepting unit.”

88. A POSITA would have understood such “identifying” to be no more than using the mobile device’s existing and standard processors, memory, and/or transceivers (among other elements) to perform this step, and such step would have been routine and conventional, particularly as many of the components of a mobile device used to perform this step are standardized and some have protocols that a POSITA would have understood to exist and implement. The ’772 Patent recognizes such standardized usage when it describes components of its system. For example,

the '772 Patent indicates the iPhone 5 could be used for the mobile device. EX1001, 20:63-21:4. The '772 Patent at 9:39-10:16 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. 9:39-10:16(bolded for emphasis).

89. A POSITA would have understood that, for example, a short range communication protocol like Bluetooth could be used with a mobile device to

“identify” a nearby device that communicated on the same protocol. A POSITA would have also understood that as part of such protocol, certain information types are necessarily shared. It would have been routine, conventional, and well-understood and incorporate such protocol in the communication transmissions between two devices while operating within a mobile application. Such identification step was well-understood, routine, and conventional as of December 18, 2013, and this Claim Element adds nothing more to this step.

d. Claim Elements [1.3], [13.3], [15.3]

Claim 1	Claim 13	Claim 15
[1.3] the identifying based at least in part on an identifier corresponding to the one or more payment accepting units,	[13.3] the identifying based at least in part on an identifier corresponding to the one or more payment accepting units,	[15.3] the identifying based at least in part on an identifier corresponding to the one or more payment accepting units,

90. In my opinion, each of Claim Elements [1.3], [13.3], and [15.3] was well-understood, routine, and conventional as of December 18, 2013.

91. As discussed above with respect to Claim Elements [1.2], [13.2], and [15.2], a POSITA would have understood that, for example, a short range communication protocol like Bluetooth could be used with a mobile device to “identify” a nearby device that communicated on the same protocol. A POSITA would have also understood that as part of such protocol, certain information types,

including information about the other device, in this case, the “payment accepting unit” would have been shared. It would have been routine, conventional, and well-understood to incorporate such protocols in the communication transmissions between two devices while operating within a mobile application. Such extra element was well-understood, routine, and conventional as of December 18, 2013, and this Claim Element adds nothing more to this step.

e. Claim Elements [1.4], [13.4], [15.4]

Claim 1	Claim 13	Claim 15
[1.4] wherein the one or more payment accepting units are payment operated machines that accept payment for dispensing of products and/or services;	[13.4] 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;

92. In my opinion, each of Claim Elements [1.4], [13.4], and [15.4] was well-understood, routine, and conventional as of December 18, 2013.

93. As discussed above with respect to Claim Elements [1.2], [13.2], and [15.2], to a POSITA, it would have made no difference that a mobile application was a mobile “payment” application, or that the other device was a “payment accepting unit.” By December 18, 2013, mobile payment applications, were well understood, for example, as described by Casey (EX1005), and using conventional capabilities on a mobile device to facilitate a mobile payment transaction via a mobile device

was routine and well-understood. Such extra element was well-understood, routine, and conventional as of December 18, 2013, and this Claim Element adds nothing more to this step.

f. Claim Elements [1.5], [13.5], [15.5]

Claim 1	Claim 13	Claim 15
[1.5] displaying a user interface of the mobile payment application on the display of the mobile device,	[13.5] displaying a user interface of the mobile payment application on the display of the mobile device,	[15.5] displaying a user interface of the mobile payment application on the display of the mobile device,

94. In my opinion, each of Claim Elements [1.5], [13.5], and [15.5] was well-understood, routine, and conventional as of December 18, 2013.

95. These Claim Elements describe the generic step of displaying the user interface of an application on the mobile device.. Even devices such as the iPhone 5 (which the '772 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], [13.6], [15.6]

Claim 1	Claim 13	Claim 15
[1.6] the user interface being configured to display a visual indication of the one or	[13.6] the user interface being configured to display a visual indication of the one or	[15.6] the user interface being configured to display a visual indication of the one or

more payment accepting units and	more payment accepting units and	more payment accepting units and
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96. In my opinion, each of Claim Elements [1.6], [13.6], and [15.6] was well-understood, routine, and conventional as of December 18, 2013.

97. 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 user interface of a mobile application on a device could be customized 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], [13.7.1], [15.7.1]

Claim 1	Claim 13	Claim 15
[1.7.1] accept user input to (i) receive selection by	[13.7.1] accept user input to (i) receive selection by	[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	a user of the mobile device of an available payment accepting unit of the one or more payment accepting units and	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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98. In my opinion, each of Claim Elements [1.7.1], [13.7.1], and [15.7.1] was well-understood, routine, and conventional as of December 18, 2013.

99. 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. 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 smart phones 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:

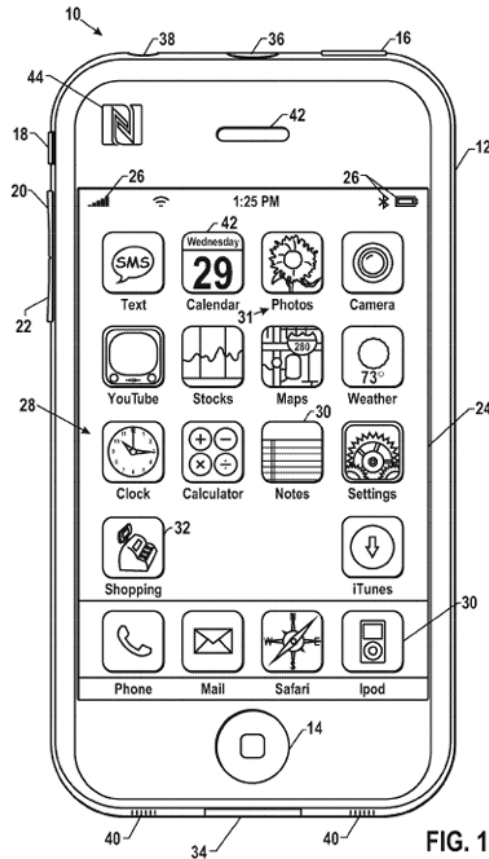


FIG. 1

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.

100. 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], [13.7.2], [15.7.2]

Claim 1	Claim 13	Claim 15
[1.7.2] (ii) trigger payment by the mobile payment application for a transaction initiated by	[13.7.2] (ii) trigger payment by the mobile payment application for a transaction initiated by	[13.7.2] (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;	the user of the mobile device with the available payment accepting unit of the one or more payment accepting units;	the user of the mobile device with the available payment accepting unit of the one or more payment accepting units;
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101. In my opinion, each of Claim Elements [1.7.2], [13.7.2], and [15.7.2] was well-understood, routine, and conventional as of December 18, 2013.

102. 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, and 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...” *Id.*, 5:57-62. This claim adds nothing more than this generic step, and to the extent it is argued that the additional language 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], [13.8], [15.8]

Claim 1	Claim 13	Claim 15
[1.8] establishing via the one or more radio transceivers a wireless communication path including the mobile device and the available payment accepting unit of the one or more payment accepting units;	[13.8] establishing via the one or more radio transceivers a wireless communication path including 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 communication path including the mobile device and the available payment accepting unit of the one or more payment accepting units;

103. In my opinion, each of Claim Elements [1.8], [13.8], and [15.8] was well-understood, routine, and conventional as of December 18, 2013.

104. These Claim Elements describe the generic step of establishing a connection between two devices, one of which is the mobile device, using an existing transceiver of the mobile device. Whether one of those 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], [13.9], [15.9]

Claim 1	Claim 13	Claim 15
[1.9] after establishing the wireless communication path, enabling user interaction with the user interface of the mobile payment application to complete the transaction;	[13.9] after establishing the wireless communication path, enabling user interaction with the user interface of the mobile payment application to complete the transaction;	[15.9] after establishing the wireless communication path, enabling user interaction with the user interface of the mobile payment application to complete the transaction;

105. In my opinion, each of Claim Elements [1.9], [13.9], and [15.9] was well-understood, routine, and conventional as of December 18, 2013.

106. 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], [13.7.1-2], and [15.7.1-2], 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 10:47-49: “[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.” This claim adds nothing more than this generic step.

I. Claim Elements [1.10], [13.10], [15.10]

Claim 1	Claim 13	Claim 15
[1.10] exchanging information with the available payment accepting unit via the one or more radio transceivers, in conjunction with the transaction; and	[13.10] 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

107. In my opinion, each of Claim Elements [1.10], [13.10], and [15.10] was well-understood, routine, and conventional as of December 18, 2013.

108. 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 adds nothing more. Exchanging information between two devices was well-understood, routine, and conventional, and a POSITA would have understood that a radio transceiver found in, for example, the iPhone 5 including two-way communication using either or both long-range and short-range communication, such as cellular and Bluetooth, respectively. 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], [13.11], [15.11]

Claim 1	Claim 13	Claim 15
[1.11] after exchanging the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device.	[13.11] after exchanging the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device.	[15.11] after exchanging the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device

109. In my opinion, each of Claim Elements [1.11], [13.11], and [15.11] was well-understood, routine, and conventional as of December 18, 2013.

110. These Claim Elements describe the generic step of updating the user interface of the mobile application after certain information has been sent or received with another device via the radio transceiver of the mobile device in conjunction with the transaction, and adds 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. This claim adds nothing more than this generic step.

n. Claims 2 and 16

Claim 2	Claim 16
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 15, 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.

111. In my opinion, the additional elements recited in claims 2 and 16 were well-understood, routine, and conventional as of December 18, 2013.

112. These Claim Elements generally describe different ways in which information may be displayed on the user interface of the mobile payment application, but do not otherwise add any other step. A “message,” “banner,” or other “visual alert from one or more of the LEDs of the mobile device” are routine and conventional ways in which to display information, and adds nothing more.

113. Even considering claims 2 and 16 as a whole (including the recitation to claim 1 and 15, respectively), this claim adds nothing that would not have been well-understood, conventional, or routine, as this claim simply states conventional ways to display information.

o. Claim 3

Claim 3
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.

114. In my opinion, the additional element recited in claim 3 was well-understood, routine, and conventional as of December 18, 2013.

115. This Claim Element generally describes a type of information and as I previously discussed, a POSITA would have understood that information can come in a variety of data types and information, and therefore, specifying that the information indicates completion of the transaction is still well-understood, routine, and conventional. In fact, Casey (*id.*) at FIGs 3 and 10 describes, for example, information indicating completion of the transaction.

116. Considering claim 3 as a whole (including the recitation to 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 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 3, 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.

117. In my opinion, the additional elements recited in claim 4 were well-understood, routine, and conventional as of December 18, 2013.

118. These Claim Elements generally describe (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 a long-range transceiver. Components such as a long-range transceiver, a server, and the ability of mobile device to communicate with (or send information to) server were well-known and conventional. The '772 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, 9:46-59

- 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.*, 10:17-50.

119. Considering claim 4 as a whole (including the recitation to 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 indicates an amount of the completed transaction does not change my opinion. *See, e.g.*, Casey (EX1005), FIG. 10.

q. Claims 5 and 18

Claim 5	Claim 18
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 15, wherein the information indicates abortion of the transaction initiated by the user of the mobile device.

120. In my opinion, the additional element recited in claims 5 and 18 was well-understood, routine, and conventional as of December 18, 2013.

121. Similar to claim 3, these Claim Elements generally describe 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 this Claim Element to be well-understood, routine, and conventional.

122. Considering claims 5 and 18 as a whole, respectively, (including the recitation to claims 1 and 15, respectively), these claims add 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 indicates abortion of the transaction initiated by the user of the mobile device does not change my opinion.

r. Claims 6 and 19

Claim 6	Claim 19
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 15, 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.

123. In my opinion, the additional element recited in claims 6 and 19 was well-understood, routine, and conventional as of December 18, 2013.

124. Similar to claims 3, 5, and 18, these Claim Elements generally describe 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 this Claim Element to be well-understood, routine, and conventional.

125. Considering claims 6 and 19 as a whole, respectively, (including the recitation to claims 1 and 15, respectively), these claims add 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 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 communication path.

126. In my opinion, the additional elements recited in claim 7 were well-understood, routine, and conventional as of December 18, 2013.

127. Claims 7 adds that mobile device includes an accelerometer, which was already well-understood, routine, and conventional. Furthermore, the ability of the accelerometer to acquire data, send that data to the mobile device CPU, which

processes that data, and then sends instructions to the mobile device (or application) to perform a task, e.g., cancel a transaction or the wireless communication path, when certain conditions are met, e.g., user exceeds a certain threshold or distance, was also well-understood, routine, and conventional.

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

129. 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 under which user input can be received, and that such device 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. Casey also 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.

130. Considering claim 7 as a whole (including the recitation to 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 availability of the available payment accepting unit to conduct a transaction.

131. In my opinion, the additional element recited in claim 8 was well-understood, routine, and conventional as of December 18, 2013.

132. Similar to claims 3, 5, 6, 18 and 19, this Claim Element generally describes a type of information, and whether that information indicates availability of the available payment accepting unit to conduct a transaction (as opposed to another type of information otherwise discussed), a POSITA would have found this claim element to be well-understood, routine, and conventional.

133. Considering claim 8 as a whole (including the recitation to 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 availability of the available payment accepting unit to conduct a transaction 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.

134. In my opinion, the additional element recited in claim 9 was well-understood, routine, and conventional as of December 18, 2013.

135. Similar to claims 3, 5, 6, 18 and 19, this claim element generally describes 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).

136. Considering claim 9 as a whole (including the recitation to 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, after establishing the wireless communication path, indicates that the wireless communication path has been established with the available payment accepting unit.

137. In my opinion, the additional element recited in claim 10 was well-understood, routine, and conventional as of December 18, 2013.

138. This claim element is directed to the type of information that is displayed on the user interface of the mobile application of the mobile device. In this case, the information “indicates that the wireless communication path has been established.” A POSITA would have understood that the user interface was a means 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 communication path is 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.

139. Considering claim 10 as a whole (including the recitation to 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, after establishing the wireless communication path, includes:
--

a visual representation of the available payment accepting unit;

140. In my opinion, the additional element recited in claim element 11.1 was well-understood, routine, and conventional as of December 18, 2013.

141. This claim element, is directed to 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 from Claim element 10 of this section. Arora, EX1004, at FIGs 3 and 7 also demonstrates that such visual representation would have been well-understood to a POSITA.

x. Claim element 11.2

Claim [11.2]

an indication of a prepared balance; and

142. In my opinion, the additional element recited in claim element 11.2 was well-understood, routine, and conventional as of December 18, 2013.

143. 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 from Claim element 10 of this section, including Casey (EX1005), at FIG. 5.

y. Claim elements 11.3 and 11.4

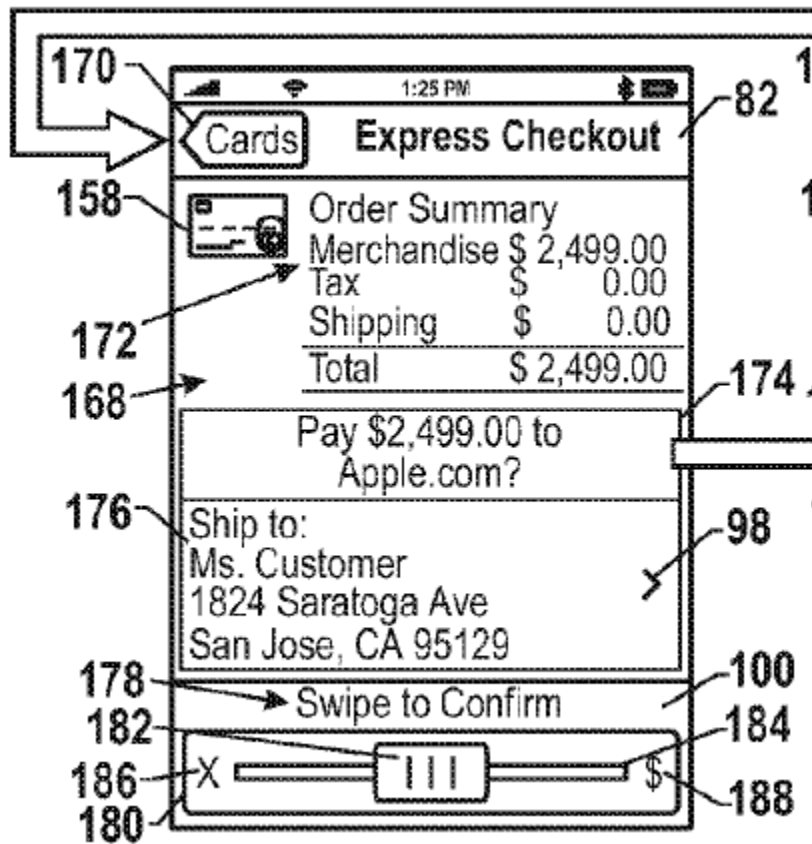
Claim [11.3]-[11.4]
an affordance that when slid, indicates the initiation of the transaction; wherein the affordance is slid in response to receiving a user input of swipe on the affordance displayed on the display of the mobile device.

144. In my opinion, claim elements 11.3 – 11.4 were well-understood, routine, and conventional as of December 18, 2013.

145. These claim elements additionally require “an affordance that when slid, indicates the initiation of the transaction.” I incorporate my analysis from Claim element 10 of this section. 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.

146. Considering claim 11 as a whole (including the recitation to 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.

z. Claim 12

Claim 12
The method of claim 1, wherein the payment operated machines include a payment activated washer, a payment activated dryer, a vending machine, a parking meter, a toll booth, an arcade game, a kiosk, a photo booth, or a ticket dispensing machine.

147. In my opinion, the additional element recited in claim 12 was well-understood, routine, and conventional as of December 18, 2013.

148. Considering claim 12 as a whole (including the recitation to claim 1), this claim adds nothing that would not have been well-understood, conventional, or routine, as this claim simply lists different types of known devices, that is, payment activated washer, a payment activated dryer, a vending machine, a parking meter, a toll booth, an arcade game, a kiosk, a photo booth, or a ticket dispensing machine, and does not otherwise recite to any new step.

aa.Claims 14 and 20

Claim 14	Claim 20
The mobile device of claim 13, wherein identifying the one or more payment accepting units includes identifying a payment activated washer, a payment activated dryer, a vending machine, a parking meter, a toll booth, an arcade game, a kiosk, a photo booth, or a ticket dispensing machine.	The non-transitory computer readable storage medium of claim 15, wherein identifying the one or more payment accepting units includes identifying a payment activated washer, a payment activated dryer, a vending machine, a parking meter, a toll booth, an arcade game, a kiosk, a photo booth, or a ticket dispensing machine.

149. In my opinion, the additional element recited in claims 14 and 20 was well-understood, routine, and conventional as of December 18, 2013.

150. Considering claims 14 and 20, respectively, as a whole (including the recitation to claim 1 and 20, respectively), this claim adds nothing that would not have been well-understood, conventional, or routine, as this claim, like claim 12, simply lists different types of known devices, that is, payment activated washer, a payment activated dryer, a vending machine, a parking meter, a toll booth, an arcade game, a kiosk, a photo booth, or a ticket dispensing machine, and does not otherwise recite to any new step. That the identification is to a specific type of payment accepting unit does not take this claim outside of what a POSITA would have considered to be well-understood, routine, or conventional.

bb. Claim 17

Claim 17
<p>The non-transitory computer readable storage medium of claim 15, wherein:</p> <p>the information indicates completion of the transaction between the user of the mobile device and the available payment accepting unit;</p> <p>the information at least includes an amount of the completed transaction;</p> <p>and</p> <p>the instructions further cause the mobile device to send at least the amount of the completed transaction to a server.</p>

151. In my opinion, the additional elements recited in claim 17 were well-understood, routine, and conventional as of December 18, 2013.

152. The additional elements recited in claim 17 are similar to those recited in claim 4 (and I incorporate my analysis for claim 4 above by reference), but additionally include that the information indicates completion of the transaction between the user of the mobile device and the available payment accepting unit. 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.

153. Considering claim 17 as a whole (including the recitation to claim 15), 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 indicates an amount of the completed transaction or that it indicates completion of the 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 Claims 1-20

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

154. 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 claims 1-20 of the '772 Patent.

155. 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” (*id.*, 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.

156. In the same field of endeavor as Low, Arora describes a conventional methodology for allowing a user to, via a mobile device, 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 a particular methods for allowing a user, via a mobile device, to 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).

157. 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, 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. The system of Arora enables users to utilize the described graphical application on their mobile devices, which receive communications and confirmations related to purchases Ex. 1004, 18:44-55.

158. 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 feature and benefits of its invention, including those that go towards the concerns of Low. EX1004, 2:17-3:53 (reciting, e.g., that it is "fast and simple product selection by the customer").

159. There would have been a reasonable expectation of success in combining the features of Arora with Low 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 smart phone such as the iPhone. In addition, a POSITA would have understood that such modifications were routine and predictable, particularly given the then-existing communication modalities, including WiFi, Bluetooth, and NFC, among others.

160. In particular, given Arora's disclosures of its user interface, which allow, for example, a user to select a vending machine or product from a list, 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.

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

162. 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 smart phones, 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.

163. 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. 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 smart phones, as well as tablets such as the iPad.

164. 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 smart phone 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, thereby resulting in the claimed subject matter of claim 7, 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.

165. 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. EX1003, 1:46-48.

166. 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.

167. It is my opinion, for the reasons discussed above and below, that Claims 1-20 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

168. In my opinion, Low in view of Arora and Casey teaches each and every element in independent claims 1, 13, and 15.

a. Claim elements [1.0]-[1.1], [13.0]-[13.1], and [15.0]-[15.1]

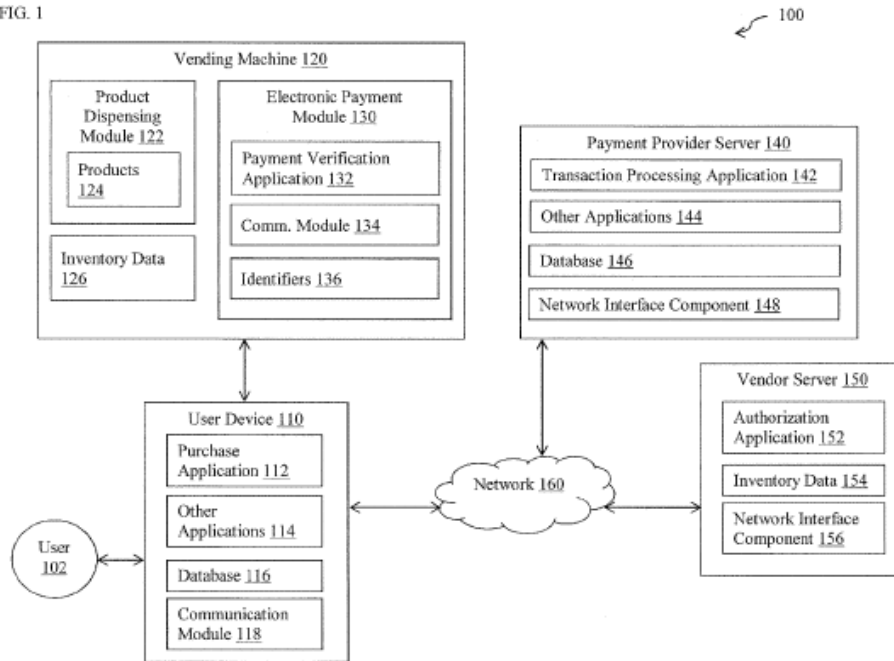
169. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this element to a POSITA:

Claim 1	Claim 13	Claim 15
<p>[1.0] 1. A method of presenting representations of payment accepting unit events, comprising:</p> <p>[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:</p>	<p>[13.0] 13. A mobile device, comprising:</p> <p>[13.1] 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:</p>	<p>[15.0] 15. A non-transitory computer readable storage medium storing one or more programs, [15.1] 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:</p>

170. Low discloses a method, a mobile device, and a computer readable storage medium of payment processing (e.g., 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.

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

172. Low also discloses that a user device, for example, the user device 110, has one or more processors, and memory. EX1003, 3:26-36 (“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.”).

173. 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.

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

175. Low also discloses that the purchase application 112 is a downloadable application having a user interface enabling the user to purchase products for sale at 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 Casey, EX1005, among other capabilities known by POSITA by December 18, 2013.

176. 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. 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, smart phone, 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.”); 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.”).

177. Arora also discloses claim elements [1.0]-[1.1], [13.0]-[13.1], and [15.0]-[15.1].

178. Arora discloses a personal electronic device, which can be a smart phone, tablet, or PDA, with a GUI and communication ability. 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 smart phone, 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.”).

179. 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, 7.

180. Arora further defines “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.” EX1004, 26:65-27:6.

181. In my opinion, a POSITA would have understood that such devices 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.

182. 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 smart phone such as an iPhone. *Id.*, 3:64-6:64.

183. 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 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 are conventional elements widely available by December 18, 2013.

b. Claim elements [1.2], [13.2], [15.2]

Claim 1	Claim 13	Claim 15
[1.2] identifying one or more payment accepting units in proximity to the mobile device that are available to accept payment from a mobile payment application executing on the mobile device,	[13.2] identifying one or more payment accepting units in proximity to the mobile device that are available to accept payment from a mobile payment application executing on the mobile device,	[15.2] identifying one or more payment accepting units in proximity to the mobile device that are available to accept payment from a mobile payment application executing on the mobile device,

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

185. For example, Low discloses that the user may utilize a user device 110 to receive data, including locations of available non-internet connected machines (“NICMs”). A POSITA would have understood that data could include a multitude of information, including availability of a NICM or other information. 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.

186. 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.”).

187. Low discloses that vending machine 120 includes an electronic module 130 having a communication interface to communicate a 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.”).

188. 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.

189. To the extent Low does not disclose the mobile device identifying one or more payment accepting units in proximity to the mobile device that are available to accept payment from a mobile payment application executing on the mobile device, a POSITA would have found this element to be obvious in view of Arora and/or Casey.

190. 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.

191. A POSITA would have understood that the user could have utilized a user device to receive locations of available NICMs based at least in part on the identifier corresponding to the one or more payment accepting unit, 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:

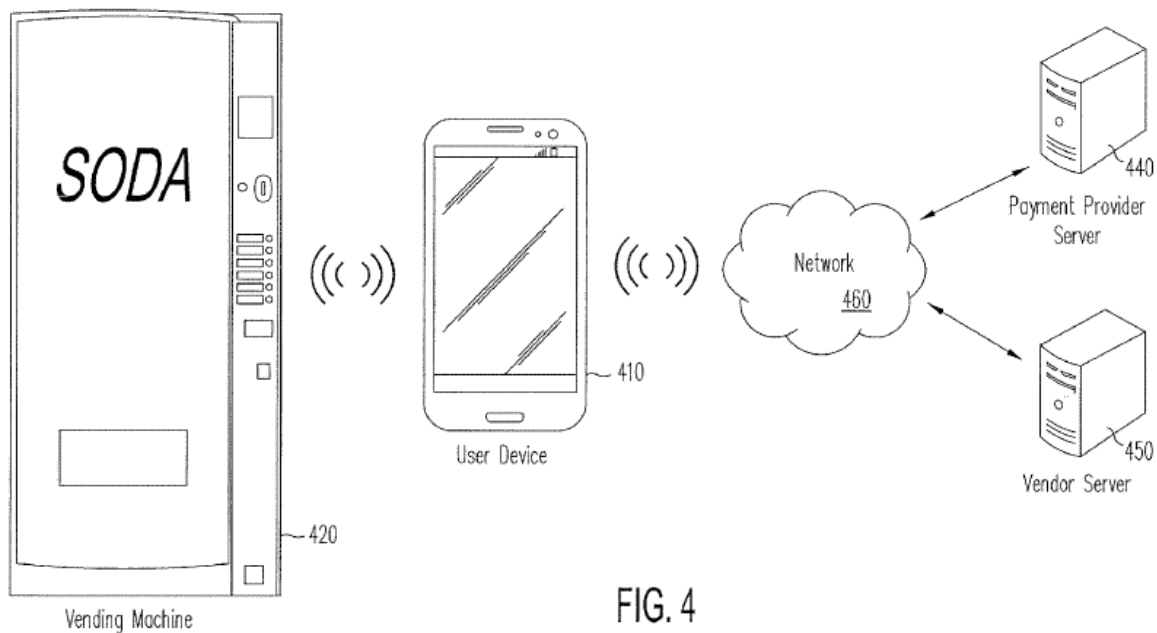


FIG. 4

EX1003, FIG. 4.

192. Further, to the extent Low does not disclose the mobile device identifying one or more payment accepting units in proximity to the mobile device that are available to accept payment from a mobile payment application executing on 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 identify the NICMs in proximity to the user device by allowing the user device to communicate via short range communication protocol with the NICM, 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 smart phone had multiple ways to communicate with other devices, including through Bluetooth or NFC. As such, this modification would have been obviously, predictable, and desired in order to facilitate the purchase and increase sales using the system in Low.

193. 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 were widely available, understood, and taught, and the claim element is stated at a high level of generality.

194. To the extent Low alone does not disclose or render obvious this claim element, Low in view of Arora and Casey renders obvious this claim element.

195. Arora discloses the use of a 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. 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 describe the transaction. Id., 12:37-13:5, 18:38-48, and give examples which are within short range.

196. Arora also discloses that an:

“available vending machine” to a customer is a vending machine that may be accessed by the customer. For example, a vending machine may be **close to the customer**, but the vending machine is located in a private business, and the customer is an employee or guest of the private business. Such as machine is not available. As another example, a machine may be in the process of being serviced, or be out of service. Such a vending machine is not available. If a customer requests the location of a near-by 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. The embodiment and the vending machine locator message sent by the server in response to the customer request may provide a choice of multiple machines, in case one is more

convenient, or preferred, over other choices. Navigation instructions may be provided.

EX1004, 24:42-62.

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

198. “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;
- “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 WiFiTM networks...A third method is for the vending machine, or a device attached to the vending machine, to build a Wi-FiTM 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;

199. 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.” EX1004, 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;
- “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

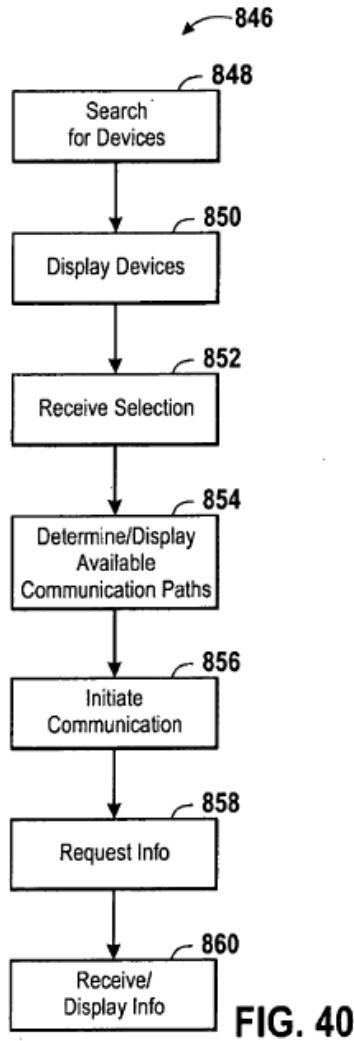
is within a particular transaction distance of a particular vending machine or vending group. Transaction distances are discussed elsewhere, herein. A vending machine location database, 91, is used as part of this determination. When the customer within the transaction distance, in step 92 a message appropriate to the potential transaction is sent to the customer.” *id.*, 18:37-47;

200. Further, Arora contemplates a long list of wireless communication methodologies and devices, defining that term as: “Wireless communication—Methods 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).

201. Thus, to the extent Low does not disclose this claim element, a POSITA would have been motivated to modify Low in view of disclosures of Arora and/or Casey to arrive at this claim element 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, EX1006, 9:37-52, a POSITA would have had a reasonable expectation of success in such modification, and such modification would have been conventional and routine.

202. Casey discloses a process to initiate and/or complete a payment transaction using a close range connection, EX1005, 14:50-64. Lin, incorporated by reference in its entirety, also discloses methods of conducting a sales transaction using an electronic device such as an iPhone, via a device link in which two devices may be identified based on broadcasted identification information, and a POSITA would have known of such methods as described by Lin when assessing the device of Casey. EX1006, [0115], [258]-[264]; FIGs. 39, 40 (FIG. 40 reproduced below):



Id., FIG. 40.

c. Claim elements [1.3], [13.3], [15.3]

Claim 1	Claim 13	Claim 15
[1.3] the identifying based at least in part on an identifier corresponding to the one or more payment accepting units,	[13.3] the identifying based at least in part on an identifier corresponding to the one or more payment accepting units,	[15.3] the identifying based at least in part on an identifier corresponding to the one or more payment accepting units,

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

204. 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.

205. Low discloses that vending machine 120 includes an electronic module 130 having a communication interface to communicate a machine identifier and other transaction information. EX1003, 4:57-5:3.

206. 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**” (emphasis added).

207. Arora discloses each machine is unique and identifying based on dynamically querying, and determining which machine is closest to the customer, and then identifying a unique machine. EX1004, 5:23-30.

208. 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.

d. Claim elements [1.4], [13.4], [15.4]

Claim 1	Claim 13	Claim 15
[1.4] wherein the one or more payment accepting units are payment operated machines that accept payment for dispensing of products and/or services;	[13.4] 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;

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

210. Low discloses that the one or more vending machine 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.”).

211. 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.”)

212. 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], [13.5], [15.5]

Claim 1	Claim 13	Claim 15
[1.5] displaying a user interface of the mobile payment application on the display of the mobile device,	[13.5] displaying a user interface of the mobile payment application on the display of the mobile device,	[15.5] displaying a user interface of the mobile payment application on the display of the mobile device,

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

214. Low discloses that the user device 110 includes a user interface that enables the user to purchase products for sale at vending machine 120. EX1003, 3:57-4:2 (“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.”); *id.* 3:64-67.

215. 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 smart phone, a tablet, a PDA, a laptop, a display in an automobile, or other device.” EX1004, 3:63-67.

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

Fig. 3

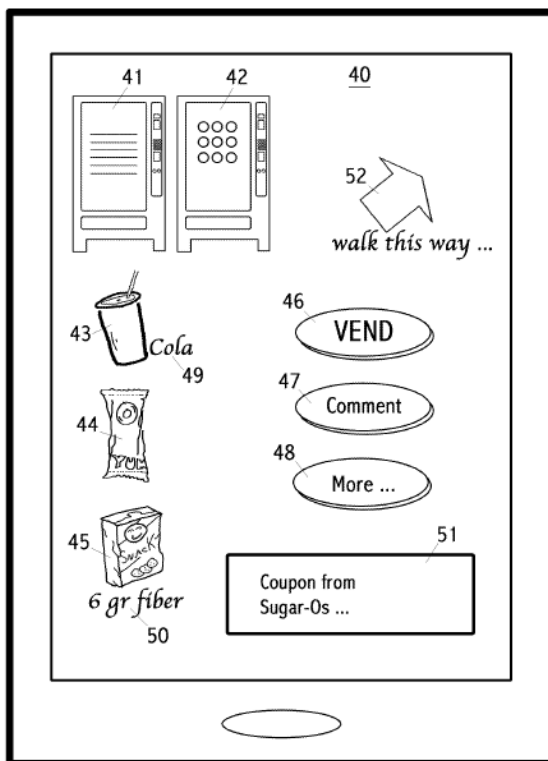
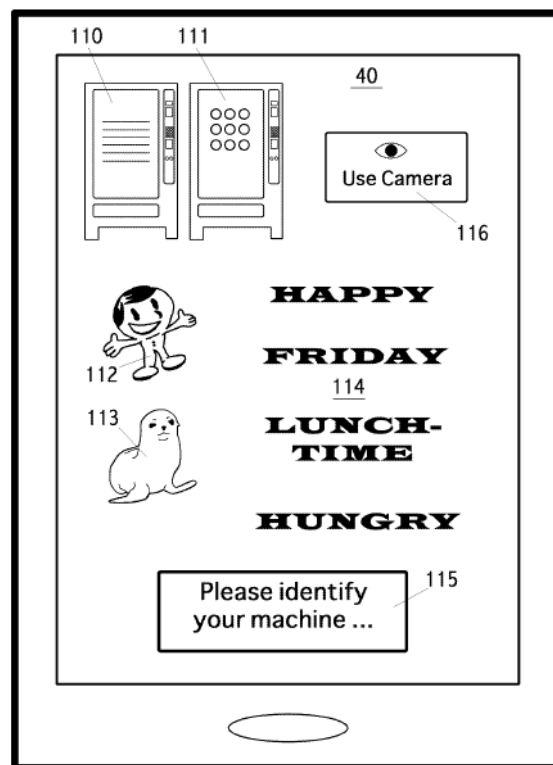


Fig. 7



EX1004, FIG. 3, FIG. 7.

217. 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], [13.6], [15.6]

Claim 1	Claim 13	Claim 15
[1.6] the user interface being configured to display a visual indication of the one or more payment accepting units and	[13.6] 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

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

219. Low discloses that the purchase application 112 of user device 110 may interface with a corresponding module at 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.”).

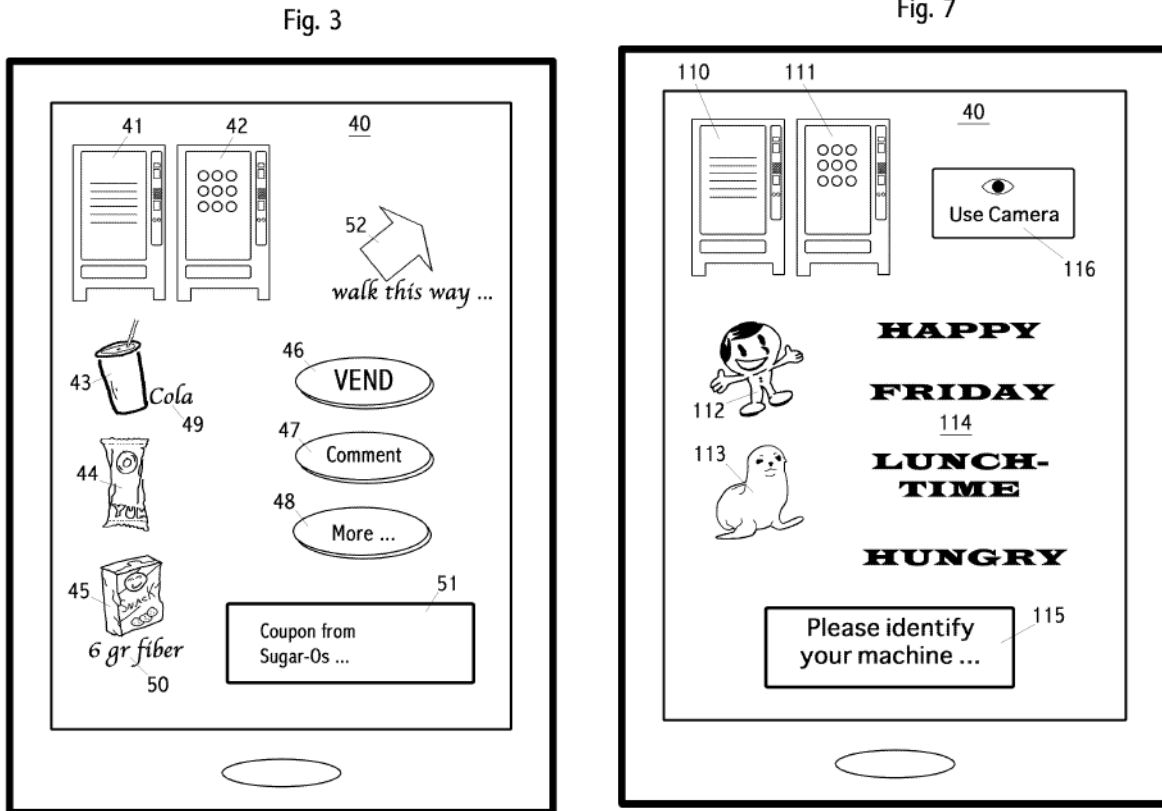
220. Low discloses that in some embodiments, “multiple machines may send their unique identifiers, such that the user is able to select one or more machines to purchase from. *Id.*, 2:11-28 (“According to various embodiments, a consumer device, such as a smart phone or computing tablet, communicates 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 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.

221. In my opinion, a POSITA would have understood that purchase application 112 of user device 110 could be configured, 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.

222. To the extent Low does not implicitly disclose this claim element, Low in view of Arora and/or Casey teaches this claim element.

223. Arora discloses Figures 3 and 7 of Arora, reproduced below, which show exemplary screenshots of the personal electronic device, EX1004, 11:49-50; *id.*, 11:55-56:



Id., FIG. 3, FIG. 7.

224. 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.

225. A POSITA would have been motivated to modify the GUI of user device 110 of Low to display a visual indication of the one or more payment accepting units, as disclosed by Arora’s exemplary screenshots 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 smart phones 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], [13.7.1], [15.7.1]

Claim 1	Claim 13	Claim 15
[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	[13.7.1] 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

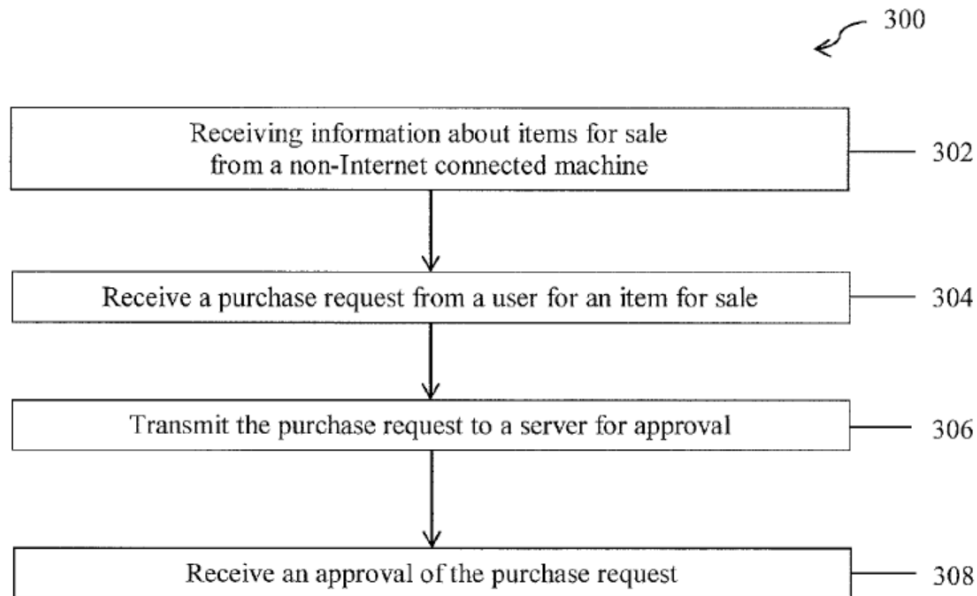
226. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this element to a POSITA.

227. I incorporate my analysis for claim elements 1.2, and 1.3 above as if fully incorporated herein.

228. Low discloses that the user interface of purchase application 112 is configured to accept user input to receive selection by 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.

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



Id., FIG. 3.

230. To the extent Low does not implicitly include this claim element, Low in view of Arora and/or Casey teaches this claim element.

231. As mentioned above, Arora discloses Figures 3 and 7 of Arora, which show exemplary screenshots of the personal electronic device, EX1004, 11:49-50; *id.*, 11:55-56.

232. 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.

233. A POSITA would have been motivated to modify the GUI of 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 and raise the level of convenience to the customer and a modification that it 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.

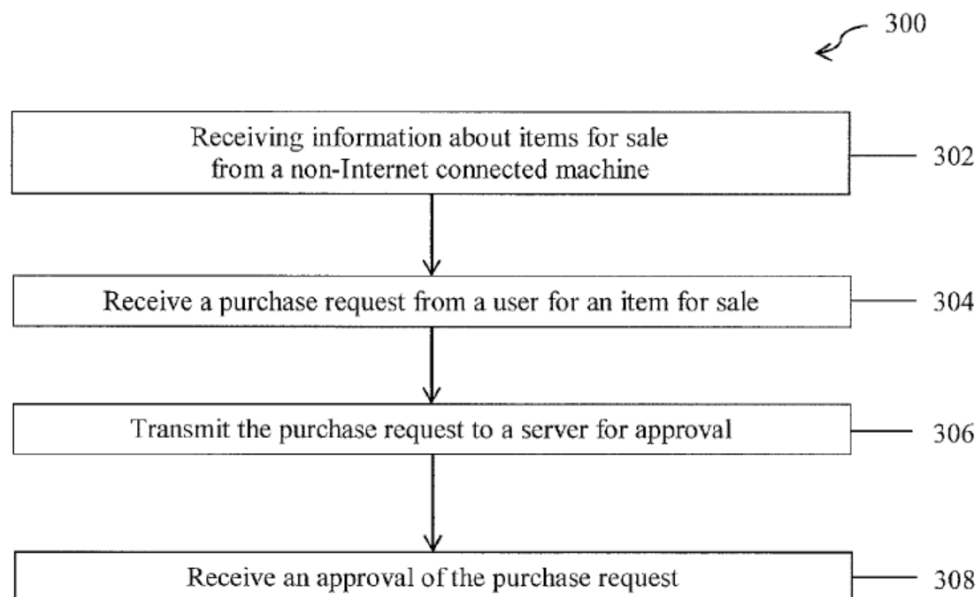
h. Claim elements [1.7.2], [13.7.2], [15.7.2]

Claim 1	Claim 13	Claim 15
[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;	[13.7.2] (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;	[13.7.2] (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;

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 “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.

236. 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 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).



237. To the extent Low does not render obvious this claim element, Low in view of Arora teaches this claim element.

238. 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.

239. 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.

240. 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.

241. 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, render obvious this claim element.

i. Claim elements [1.8], [13.8], [15.8]

Claim 1	Claim 13	Claim 15
[1.8] establishing via the one or more radio transceivers a wireless communication path including the mobile device and the available payment accepting unit of the one or more payment accepting units;	[13.8] establishing via the one or more radio transceivers a wireless communication path including 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 communication path including the mobile device and the available payment accepting unit of the one or more payment accepting units;

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

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

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

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

246. Arora also discloses, for example at FIG. 5, a connection between the vending machine 60 and 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.

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

j. Claim elements [1.9], [13.9], [15.9]

Claim 1	Claim 13	Claim 15
[1.9] after establishing the wireless communication path, enabling user interaction with the user interface of the mobile payment application to complete the transaction;	[13.9] after establishing the wireless communication path, enabling user interaction with the user interface of the mobile payment application to complete the transaction;	[15.9] after establishing the wireless communication path, enabling user interaction with the user interface of the mobile payment application to complete the transaction;

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

249. 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.

250. 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 user device 110 to select at least one product 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.

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

252. Low discloses that the purchase request may be received after a user utilizes user device 110 to select at least one product of 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.”).

253. A POSITA would have found it obvious, in view of Arora and/or Casey, to enable user interaction with the user interface of purchase application 112 of the user device 110 of Low after establishing the wireless communication path in order to either 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 would have known to look to other technology, including that disclosed in Arora and/or Casey, to arrive at the claimed element.

254. To the extent Low alone does not disclose or teach this element, a POSITA would have been motivated to combine the user interface of Arora with the system of Low in order to provide further usability and convenience to the user of the mobile payment application.

255. 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 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.”). *Id.*, 26:65-27:10.

256. A POSITA would have found it obvious to have the step of enabling user interaction with the user interface of the mobile payment application to complete the transaction come after the establishment of the wireless communication path in order to ensure that the transaction was secure, for example, and found it routine in view of the state of the art as of December 18, 2013, *e.g.*, EX1005, FIG. 5.

k. Claim elements [1.10], [13.10], [15.10]

Claim 1	Claim 13	Claim 15
[1.10] exchanging information with the available payment accepting unit via the one or more radio transceivers, in conjunction with the transaction; and	[13.10] 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

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

258. 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.

259. Low discloses that a method for use by user device 110 includes a step 302, at which step, communication module 118 of user device 110 connects to communication module 134 of 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.”).

260. A POSITA would have understood that such disclosure, as noted in my previous paragraph, discloses this claim element, 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.

261. Arora discloses this claim element 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.

262. Casey further disclose exchanging information via the one or more radio transceivers via the various communication protocols, and use of such protocols with the system of Low would have been well-understood and routine to POSITA. EX1005, 3:65-4:3; 5:57-6:7; 6:51-7:25.

I. Claim elements [1.11], [13.11], [15.11]

Claim 1	Claim 13	Claim 15
[1.11] after exchanging the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device.	[13.11] after exchanging the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device.	[15.11] after exchanging the information, displaying, on the display, an updated user interface of the mobile payment application to the user of the mobile device

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

264. 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 purchase application 112.

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

266. To the extent Low does not include or render obvious this claim element, Arora and Casey teach this element, 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.

267. 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).

268. 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 smart phone 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).

269. 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 16

Claim 2	Claim 16
The method of claim 1, wherein the updated user interface of the mobile payment application includes at least one of:	The non-transitory computer readable storage medium of claim 15, 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 message displayed on the display of the mobile device;
a banner notification displayed on a display of the mobile device; and/or	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.	a visual alert from one or more LEDs of the mobile device.

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

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

272. 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.

273. A POSITA would have understood that this approval may be conveyed to the user device 110 via 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 device, particularly in view of the state of the art as of December 18, 2013, which included smart phone technology with these conventional capabilities. See Casey (EX1005) at 4:38-40.

274. In my opinion, a POSITA would have understood that the user interface of 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. *Id.*, 4:14-27, 3:57-4:2.

275. Low further discloses that the machine may send out product details to the user device 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.”).

276. 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).

277. To the extent Low does not render this claim element obvious. Low in view of Arora and Casey would have rendered obvious this claim element.

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

n. Claim 3

Claim 3
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.

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

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

281. 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.

282. To the extent Low does not include this element, 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 this element, 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 make this modification 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
<p>The method of claim 3, 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:</p> <p>sending at least the amount of the completed transaction to a server via the long-range transceiver.</p>

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

284. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole each of claims 1 and 3.

285. Low discloses that 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 WiFi. EX1004, 3:64-4:7.

286. 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.”).

287. 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.

288. 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 make this modification in order to update the payment provider in the ordinary course of business, for example, to update the user’s account (i.e., 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 change to be routine and conventional. EX1005, 10:14-19.

p. Claims 5 and 18

Claim 5	Claim 18
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 15, wherein the information indicates abortion of

	the transaction initiated by the user of the mobile device.
--	--

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

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

291. In my opinion, a POSITA would have understood that Low inherently includes, or at minimum teaches this element, 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.

292. 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.

293. 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.

294. 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, a new message soliciting the customer after the customer has responded positively to the prior purchase offer would indicate an abortion of the transaction.

295. 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 19

Claim 6	Claim 19
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 15, 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.

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

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

298. Low discloses this claim element for the same reasons as stated in claim elements 4 and 5. To the extent that Low does not include this claim element, 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.

299. 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.

300. 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 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:

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

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

303. In addition, Casey discloses that its 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

304. Casey would have rendered obvious this further claim element, based on at least EX1005, 7:59-8:13.

305. 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).

306. Based on such disclosure, POSITA would have understood that the accelerometer of the mobile device could be used to measure motion or acceleration, and that such form of user data could be used to confirm or decline payment transaction.

307. 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.

308. A POSITA would have found it obvious to modify the disclosure of Casey to have the accelerometer determine whether the user (holding the user device) was walking away from (or towards) the payment accepting unit.

Claim 7.3

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

309. 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. A POSITA would have understood that the hardware and software of 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.

310. Low 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.

s. Claim 8

Claim 8

The method of claim 1, wherein the information reflects availability of the available payment accepting unit to conduct a transaction.

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

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

313. Low discloses that user device 110 includes at least one communication module 118 adapted to communicate with vending machine 120, and further, that communication module 118 may include wired and/or wireless network communication devices including radio frequency, Bluetooth and near field communication devices. EX1003, 4:45-56.

314. Low discloses that 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”).

315. In my opinion, a POSITA would have understood that the inventory data 126 of vending machine 120 displayed to user 102 on the user device 110 would necessarily reflect the availability of the available payment accepting unit to conduct a transaction. Similarly, the inventory data 126 of vending machine 120 may indicate that there is zero inventory. Display of this inventory data 126 to user 102 on the user device 110 would reflect the non-availability of the available payment accepting unit to conduct a transaction.

316. Arora discloses that an “‘available vending machine’ to a customer is a vending machine that may be accessed by the customer. For example, a vending machine may be close to the customer, but the vending machine is located in a private business, and the customer is an employee or guest of the private business. Such as machine is not available. As another example, a machine may be in the process of being serviced, or be out of service. Such a vending machine is not available. If a customer requests the location of a near-by 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. The embodiment and the vending machine locator message sent by the server in response to the customer

request may provide a choice of multiple machines, in case one is more convenient, or preferred, over other choices. Navigation instructions may be provided.” EX1004, 24: 42-62.

317. A POSITA reading this disclosure of Arora would have understood that such availability 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.

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

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

320. Low discloses that 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.

321. Low discloses that the machine may send out product details to the user device 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.”).

322. In my opinion, a POSITA would have understood that Low teaches that a coupon that could be targeted to the user of the mobile device based on the vending transaction.

323. 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 element.

324. 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.

325. 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).

326. 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.

327. 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, after establishing the wireless communication path, indicates that the wireless communication path has been established with the available payment accepting unit.

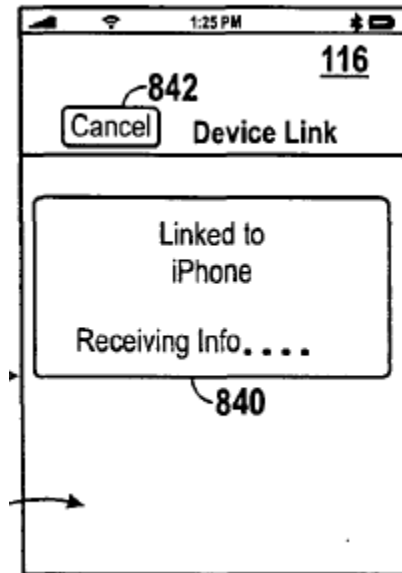
328. It is my opinion that Low in view of Arora and/or Casey would have disclosed or rendered obvious this claim to a POSITA.

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

330. Low discloses that “[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.

331. 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 was routine, predictable, and a POSITA would have been motivated to make such

modification 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 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]

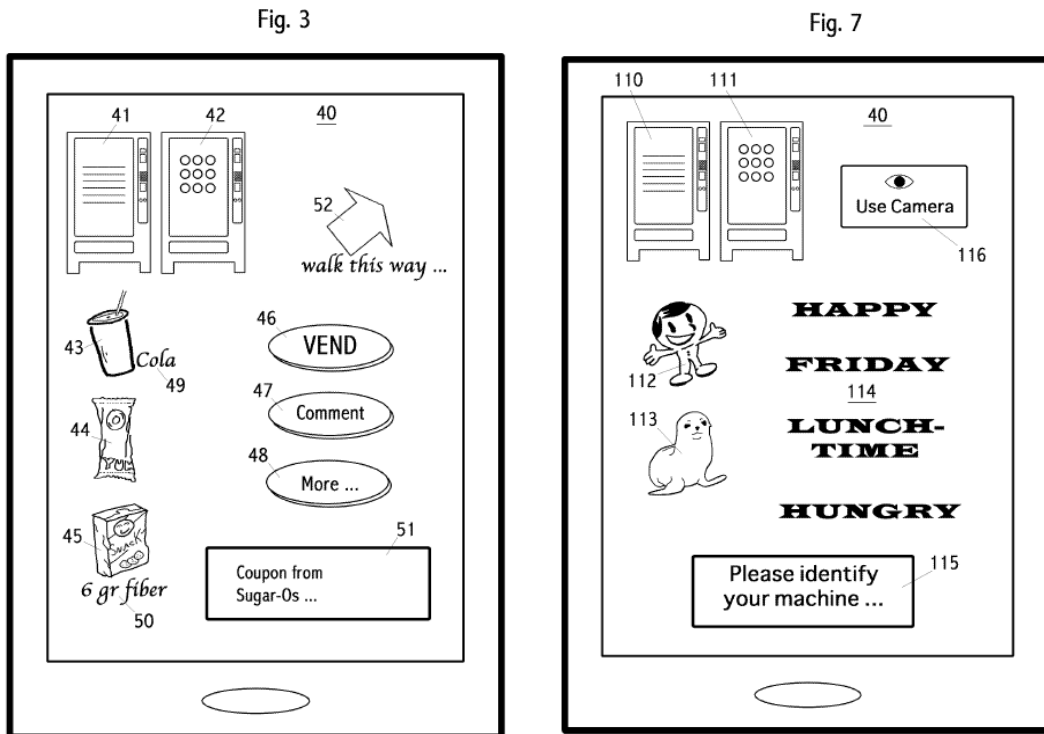
The method of claim 1, wherein the user interface of the mobile payment application, after establishing the wireless communication path, includes:

a visual representation of the available payment accepting unit;

332. 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.

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

334. As mentioned above with respect to my opinion on element 1.6, Arora discloses Figures 3 and 7 of Arora, pasted below, which show exemplary screenshots of the personal electronic device, EX1004, 11:49-50; *id.*, 11:55-56:



Id., FIG. 3, FIG. 7.

335. 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.

336. A POSITA would have been motivated, in view of Arora and/or Casey, to modify the GUI of user device 110 of Low to display a visual indication of the one or more payment accepting units, after establishing the communication path, as disclosed by Arora's exemplary screenshots 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 smart phones 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.

337. A POSITA would have been motivated, in view of Arora and/or Casey, to make this modification after establishing the wireless communication path order 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.

338. 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

339. 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.

340. 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;

341. 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.

342. In my opinion, A POSITA would have understood Low, EX1003 at 3:37-48, (“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 smart phone, personal digital assistant (PDA), laptop computer, and/or other types of computing devices capable of transmitting and/or receiving data, such as a smart phone. 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”), *id.*, 11:9-16 (“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.”), among other

excerpts, 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 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 smart phones, like the iPhone5, and not new at the time of the purported invention.

343. 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.

344. A POSITA would have understood that the GUI in 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 element 11.4

Claim [11.4]

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.

345. 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.

346. 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 was capable of displaying information on the balance in customer account and receive a user input of swipe to purchase, 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 12

Claim 12

The method of claim 1, wherein the payment operated machines include a payment activated washer, a payment activated dryer, a vending machine, a parking meter, a toll booth, an arcade game, a kiosk, a photo booth, or a ticket dispensing machine.
--

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

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

349. 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.

aa.Claims 14 and 20

Claim 14	Claim 20
The mobile device of claim 13, wherein identifying the one or more payment accepting units includes identifying a payment activated washer, a payment activated dryer, a vending machine, a parking meter, a toll booth, an arcade game, a kiosk, a photo booth, or a ticket dispensing machine.	The non-transitory computer readable storage medium of claim 15, wherein identifying the one or more payment accepting units includes identifying a payment activated washer, a payment activated dryer, a vending machine, a parking meter, a toll booth, an arcade game, a kiosk, a photo booth, or a ticket dispensing machine.

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

351. Low in view of Arora and/or Casey would have disclosed or rendered obvious as a whole each of claims 13 and 15. See Section X.A.2.

352. I refer to my discussion above, and incorporate the same here, regarding claim elements 1.3, 13.3, 12.

bb. Claim 17

Claim 17

The non-transitory computer readable storage medium of claim 15, wherein:

the information indicates completion of the transaction between the user of the mobile device and the available payment accepting unit;

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.

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

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

355. I refer to my discussion above, and incorporate the same here, regarding claims 3 and 4 above.

XI. Other Evidence Relevant to Obviousness

356. 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.

357. 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. I reserve the right to reconsider my opinions, as set forth above, if any further such evidence is brought to my attention.

XII. CONCLUSION

358. 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.

359. 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 25th day of July, 2023, at Glen Mills, Pennsylvania.



Safwan Zaheer