UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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GOOGLE LLC,
Petitioner,

v.

RFCYBER CORP.,
Patent Owner

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PGR2021-00029
U.S. Patent No. 10,600,046

PETITION FOR POST-GRANT REVIEW

(§ 103)

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I.   INTRODUCTION

Google LLC ("Petitioner") respectfully requests that the Board review and cancel as unpatentable under 35 U.S.C. § 103 claims 1-17 ("challenged claims") of U.S. Patent No. 10,600,046 ("the '046 Patent," GOOG-1001).

II.   MANDATORY NOTICES

A.   Real Party-in-Interest

The real parties-in-interest are Google LLC[1] and Google Payment Corp.

B.   Related Matters

Pursuant to 37 C.F.R. § 42.8(b)(2), to the best knowledge of the Petitioner, the '046 Patent is or was involved in the following cases ("Related Litigation"):

Case Heading	Number	Court	Filed
RFCyber Corp. v. Google LLC *et al.*	2:20-cv-00274	EDTX	Aug. 21, 2020
RFCyber Corp. v. LG Electronics, Inc.	2:20-cv-00336	EDTX	Oct. 16, 2020
RFCyber Corp. v. Samsung Electronics Co., Ltd. *et al.*	2:20-cv-00335	EDTX	Oct. 16, 2020

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[1] Google LLC is a subsidiary of XXVI Holdings Inc., which is a subsidiary of Alphabet Inc. XXVI Holdings Inc. and Alphabet Inc. are not real parties in interest to this proceeding.

Petitioner is also concurrently filing a petition for post-grant review of the '046 Patent that challenges claims 1-17 under 35 U.S.C. §§ 112(a) and 101 (PGR2021-00028).

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III.   GROUNDS FOR STANDING

Petitioner certifies that the '046 Patent is eligible for post-grant review because it contains at least one claim with an effective filing date after March 16, 2013, as described below in Section V. *See* AIA §§ 3(n)(1) and 6(f)(2)(A). Petitioner is not barred or estopped from requesting post-grant review challenging the patent claims on the grounds identified in this petition. Petitioner has not filed a civil action challenging the validity of any claim of the '046 Patent.

IV.   THE '046 PATENT[2]

A.   Overview of the '046 Patent

The '046 Patent pertains to a method of presenting and settling an invoice. GOOG-1001, Abstract. While the specification describes many different embodiments, the challenged claims generally correspond to Figures 1A and 1B (but with several important differences). Figures 1A and 1B describe a method in which a restaurant waiter delivers a bill/invoice to a customer via a "tag" or "contactless card," rather than on paper. GOOG-1001, 7:19-26. The customer uses

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[2] Unless otherwise specified, all **bold** and ***bold italics*** emphasis below has been added.

a mobile device (*e.g.*, a smartphone) to read the invoice, select a payment method, and settle the invoice by sending a payment request to a payment server (e.g., a "payment gateway"). GOOG-1001, 7:25-8:24. Figure 1A illustrates the system for carrying out this method:
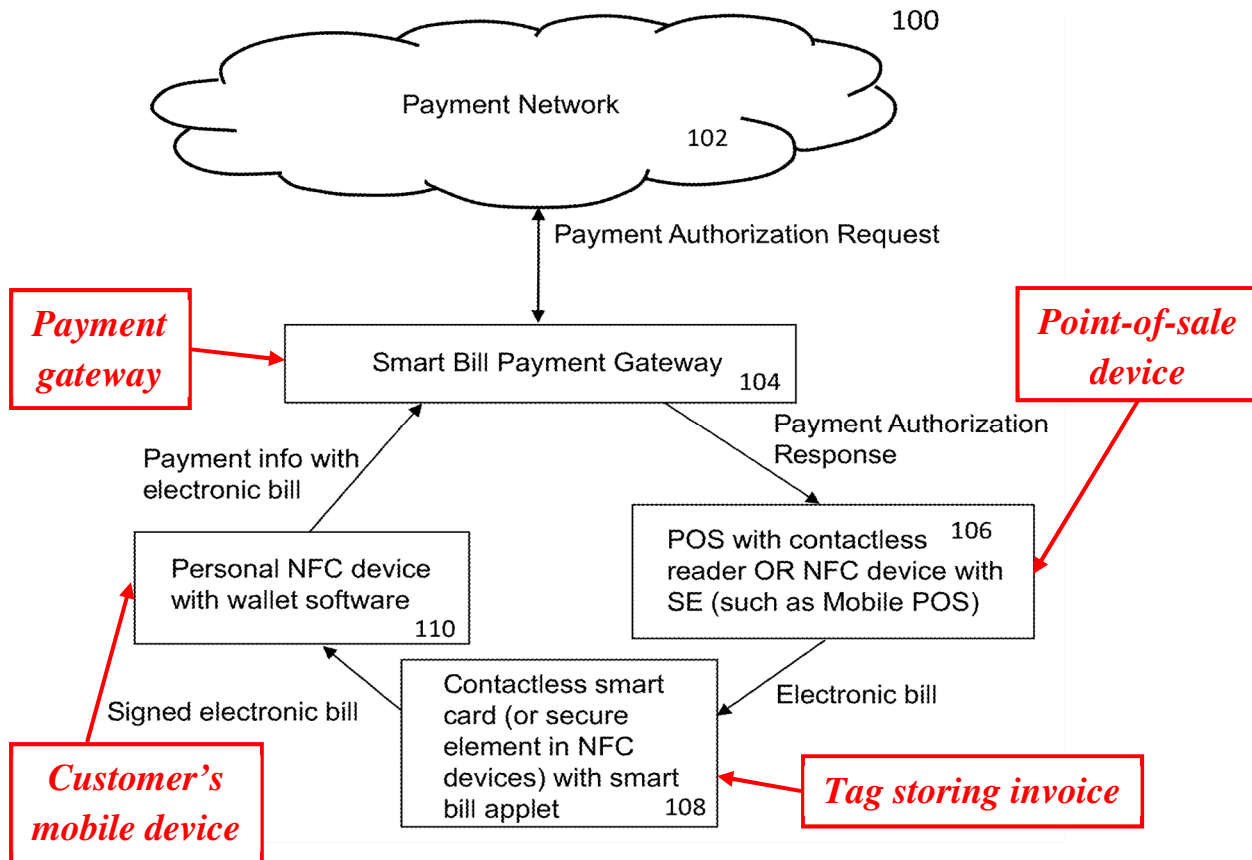
GOOG-1001, Fig. 1A (annotated); GOOG-1003, ¶39.

Figure 1B illustrates that the merchant's point-of-sale (POS) device 106 generates a bill that is written to the tag 108 (step 122). When the tag 108 is presented to the customer (step 124), an application on the mobile device reads the tag 108 (step 126), and the bill is displayed on the mobile device. GOOG-1001,

7:19-33. The user can optionally add a tip (step 128). GOOG-1001, 7:59-61. The mobile device user selects a payment instrument, such as "an electronic wallet or purse (a.k.a. e-purse) already created in the mobile device" (step 130). GOOG-1001, 7:48-50, 7:57-59. The mobile device then transmits a payment request to a payment gateway 104 (step 132). GOOG-1001, 7:62-65. The payment gateway 104 verifies whether the payment request authorized by the customer is sufficient to cover the amount on the bill (step 134), and, if so, authorizes the payment with a financial payment network (step 136). Once the transaction is approved or denied, the payment server notifies the merchant as to whether payment has been authorized (step 138). GOOG-1001, 7:65-8:15; GOOG-1003, ¶40.

The methods in independent claims 1 and 12 fundamentally differ from the embodiment of Figures 1A and 1B in that they each require an e-purse balance verification on the mobile device *before* sending the payment request to the payment gateway. The claims require that, after the mobile device calculates the total amount (invoice amount + tip), it "verif[ies] the total amount with a balance in the e-purse…without sending the payment request to a payment gateway." GOOG-1001, 25:47-51. "[W]hen the balance is less than the total amount," the mobile device "display[s] a denial of the payment request." GOOG-1001, 25:52-53. Alternatively, when "the balance is sufficient to honor the payment request,"

the mobile device "send[s] the payment request from the mobile device to the payment gateway." GOOG-1001, 25:55-56; GOOG-1003, ¶41.

B.   Prosecution History

The '046 Patent issued on March 24, 2020 from U.S. Patent Application No. 14/728,349 ("the '349 application") filed June 2, 2015.

During a prolonged prosecution, the Examiner repeatedly rejected the claims of the '349 application over various references. GOOG-1002, 622, 468, 370, 266, 166. After each rejection, the applicants amended the claims to avoid the prior art. GOOG-1002, 561, 451, 357, 253, 153. To gain allowance, the applicants added the concept of an "e-purse" and related functionality to the claims ("the E-Purse Amendment") (discussed in Section V.B below). GOOG-1002, 153-58. The Examiner issued a notice of allowance after the E-Purse Amendment. GOOG-1002, 7-20.

V.   THE '046 PATENT IS ELIGIBLE FOR POST-GRANT REVIEW

The '046 Patent is eligible for post-grant review (PGR) because it contains at least one claim with an effective filing date that is later than March 16, 2013, the AIA effective date. *See* AIA § 3(n)(1). The '046 Patent issued from an application filed on June 2, 2015 (post-AIA). Although the application is in a chain of continuations and continuations-in-part, some of which were filed before the AIA

effective date, the claims of the '046 Patent contain limitations that were not disclosed in those earlier-filed patent applications. *See Inguran, LLC v. Premium Genetics (UK) Ltd.*, PGR2015-00017, Paper 8, at 10-11 (PTAB Dec. 22, 2015) (a patent granted from a "transitional application" is PGR-eligible if it contains at least one claim that was not disclosed in compliance with § 112(a) in any pre-AIA priority application).

Claims 1-17 contain limitations that were either (i) not disclosed in the pre-AIA patent applications due to a broken priority chain or (ii) not disclosed in *any* application due to unsupported amendments made during prosecution of the '046 Patent. Just *one* of these post-AIA claims renders the '046 Patent eligible for PGR. *See* AIA § 3(n)(1).

A. The '046 Patent's Broken Priority Chain Creates PGR Eligibility.

As illustrated below, the '046 Patent claims priority to three pre-AIA applications—the '832 application, the '653 application, and the '802 provisional ("the pre-AIA applications").
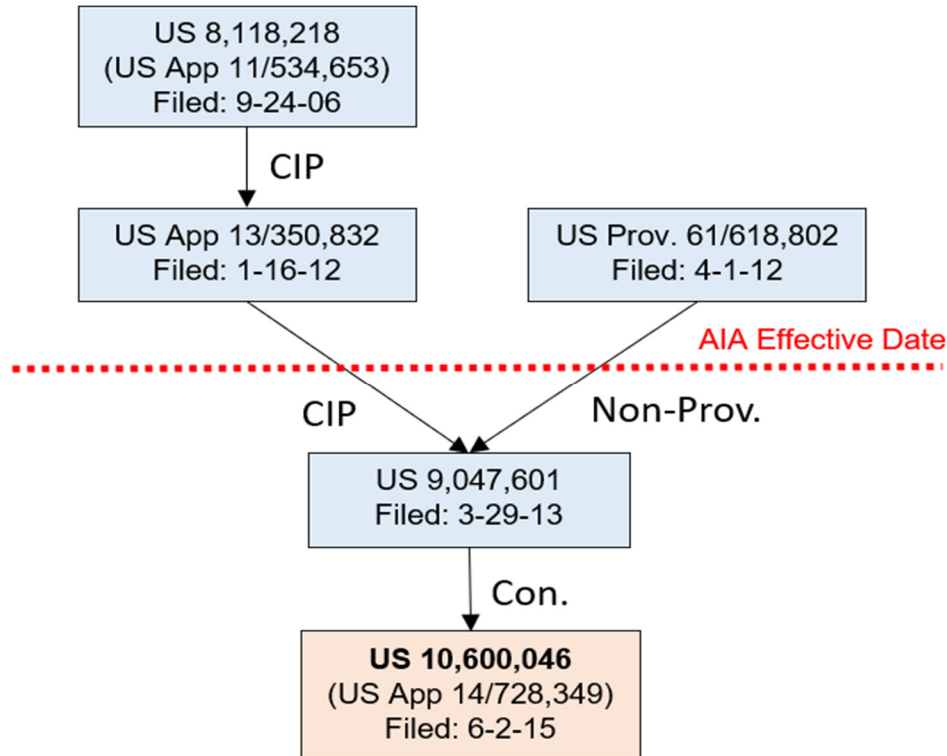
The applications filed after the AIA effective date—the applications for the '046 Patent and '601 Patent ("the AIA Patents")—contain figures and description not found in the pre-AIA applications. The two pre-AIA non-provisional applications (the '832 and '653) do not include Figures 1A-1B and the associated description contained in the AIA Patents (GOOG-1001, 5:29-8:30). These figures and description were first introduced together in the '601 Patent. GOOG-1026 (comparison of the '601 Patent specification and '832 application specification). While Figures 1A-1B of the AIA Patents were included in the pre-AIA '802 provisional, the associated description in the AIA Patents was ***not***. GOOG-1027 (comparison of the '802 provisional and the '601 Patent specifications). Instead,

the '802 provisional includes a brief, high-level overview of the figures that was not incorporated by reference into the '046 Patent. These differences in disclosure are depicted below:
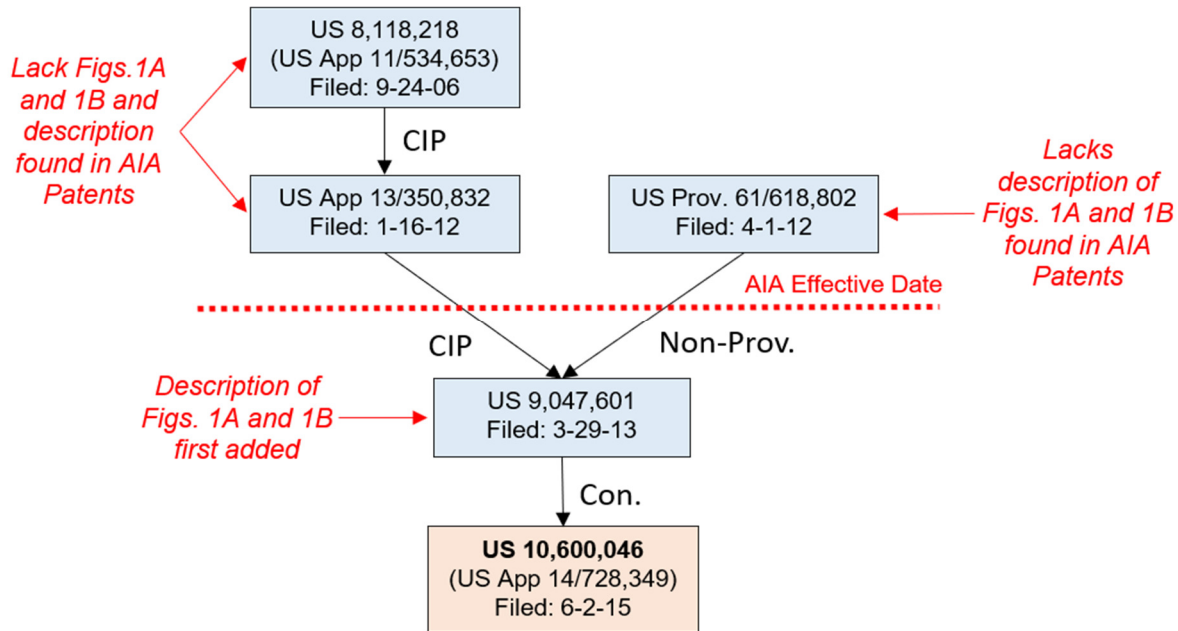
GOOG-1003, ¶53.

As discussed below, claims 1, 6, and 15 of the '046 Patent recite subject matter supported only in the ***description*** of Figures 1A-1B first filed with the '601 Patent on March 29, 2013, after the AIA effective date.

1. The "displaying a denial" step in claim 1 lacks written description support in the pre-AIA applications.

The '046 Patent is PGR-eligible because claim 1's "displaying a denial" step lacks written description in the pre-AIA applications. Claim 1 recites "displaying a denial of the payment request when the balance is less than the total amount."

GOOG-1001, 25:52-53. There is no written description supporting this limitation in any of the pre-AIA applications because such support first appeared in the post-AIA '601 Patent.

The two pre-AIA non-provisional applications, the '653 and the '832, lack written description support for the step of "displaying a denial" based on a failed balance verification, as recited in claim 1. GOOG-1003, ¶56. The earlier '653 application (U.S. 8,118,218) lacks any disclosure of a display step. GOOG-1028; GOOG-1003, ¶¶55-56. The '832 application (US 2012/0130838, GOOG-1029) also lacks any disclosure of a display step; while it generally describes comparing the balance of an e-token with a purchase amount in association with Figures 6C and 6D, but it fails to describe displaying a denial within the mobile device when the balance is insufficient. *See* GOOG-1029, Figs. 6C-6D, [0173]-[0177]; GOOG-1003, ¶56. In the embodiment of Figure 6C, shown below, when the balance is insufficient at step 656, the process displays an option to "top-up" the balance, but does not display a denial. GOOG-1029, Fig. 6C, [0174].
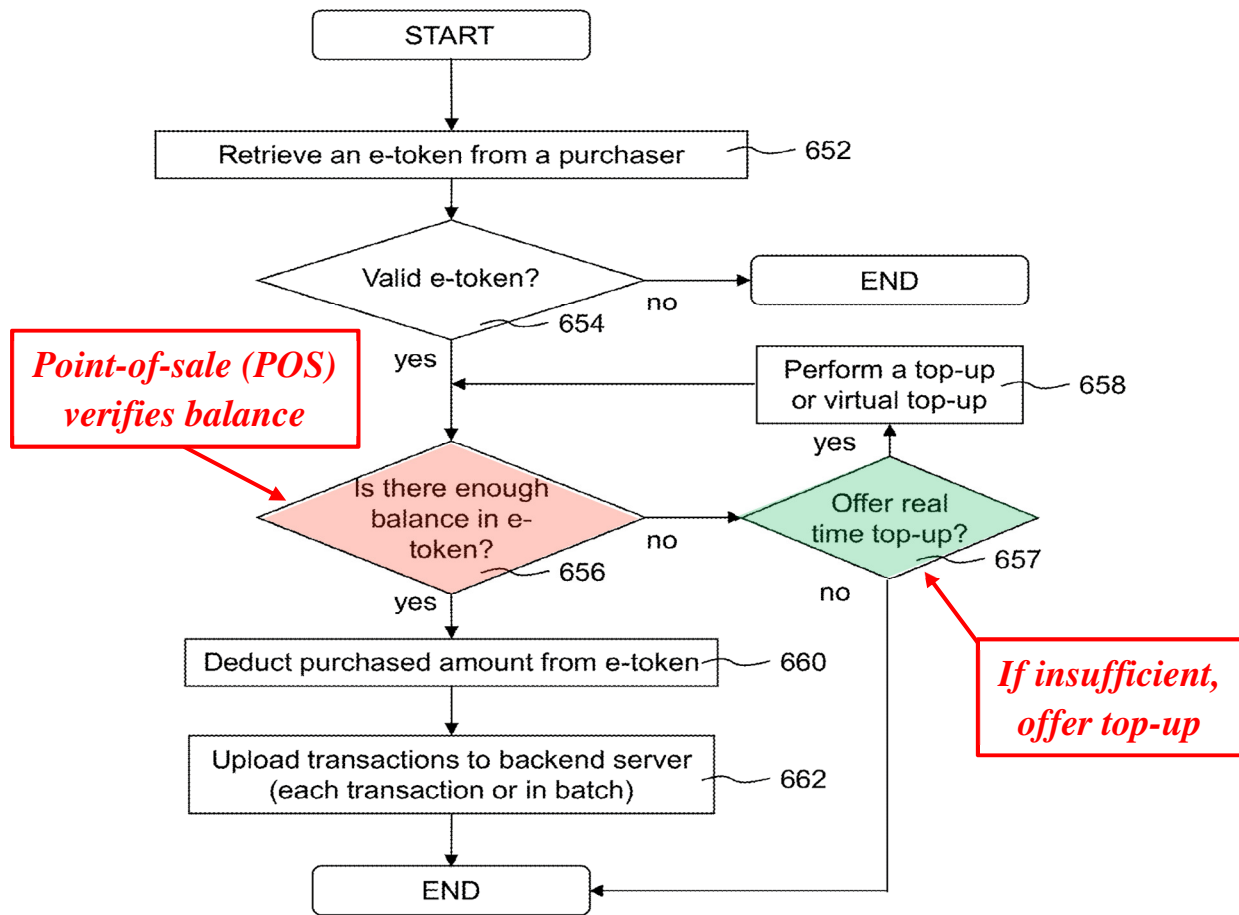
GOOG-1029, Fig. 6C (annotated); GOOG-1003, ¶56.

In the embodiment of Figure 6D, shown below, when the balance is insufficient at step 674, the process 670 simply ends after a "return message" denying the purchase is received by the POS manager 623. GOOG-1029, Fig. 6D, ¶[0177]. No denial is displayed in the mobile device. Even if process 670 disclosed "displaying a denial" (which it does not), any such denial would not be based upon the balance being less than a "total amount" (i.e., the invoice amount

plus an additional amount from the user). Process 670 does not contemplate a user

entering an additional amount.
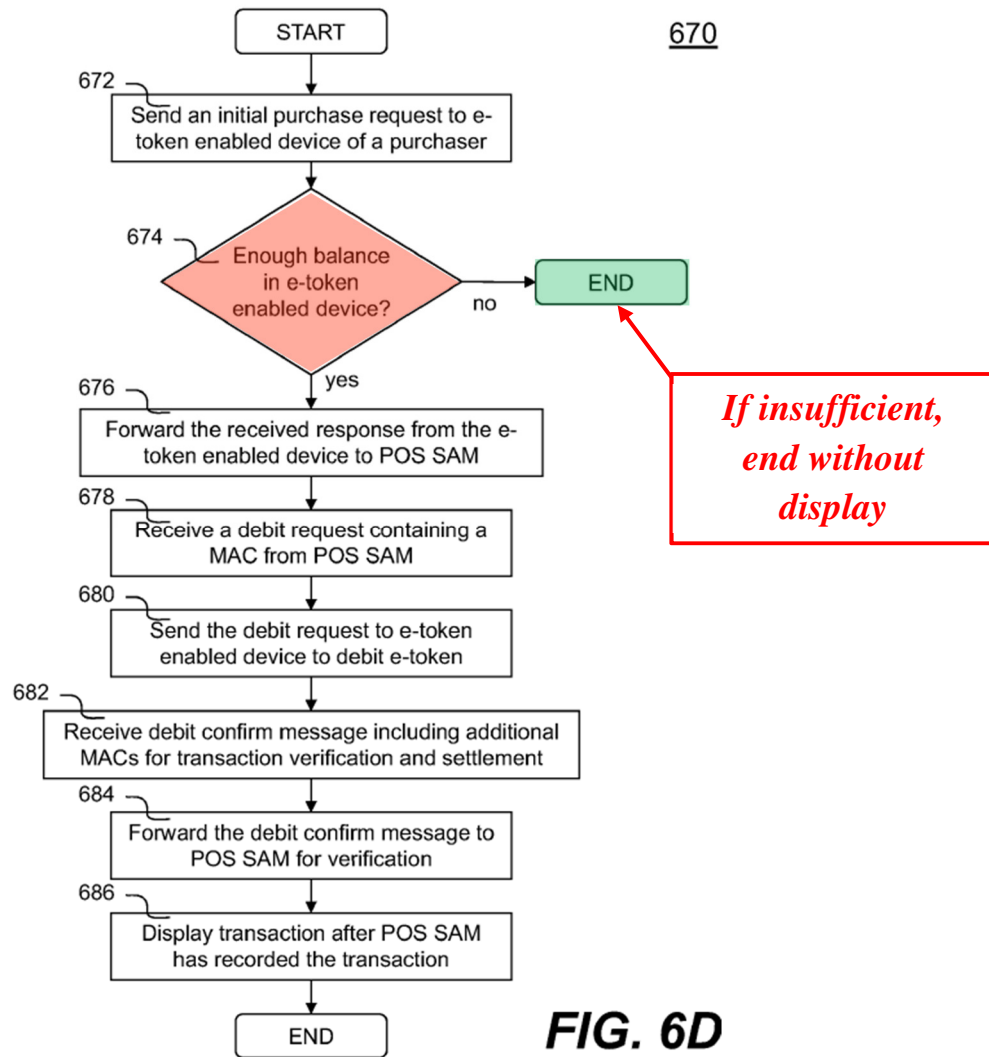
GOOG-1029, Fig. 6D (annotated); GOOG-1003, ¶56.

Because none of the pre-AIA applications provide § 112 support for

"displaying a denial of the payment request when the balance is less than the total

amount," claim 1 has an effective filing date after March 16, 2013. GOOG-1003, ¶¶55-57.

2. The "account and bank information of the registered merchant" limitation in claims 6 and 15 lacks written description support in the pre-AIA applications.

The '046 Patent is PGR-eligible because claims 6 and 15 lack written description support in the pre-AIA applications. Claims 1 and 12 recite a tag with "data" that is captured by the mobile device. Dependent claims 6 and 15 define the recited "data" to include "account and bank information" of the merchant.

The idea that the tag (or "contactless card") includes "account and bank information" of the merchant is supported *only* in the description of Figures 1A-1B added to the '601 Patent specification *after* the AIA effective date. GOOG-1001, 7:33-40 (corresponding to GOOG-1031 ('601 Patent), 7:14-22). Figures 1A-1B (filed with the pre-AIA '802 provisional) disclose only that the contactless card carried from the POS to the mobile device includes an "electronic card," as shown below:
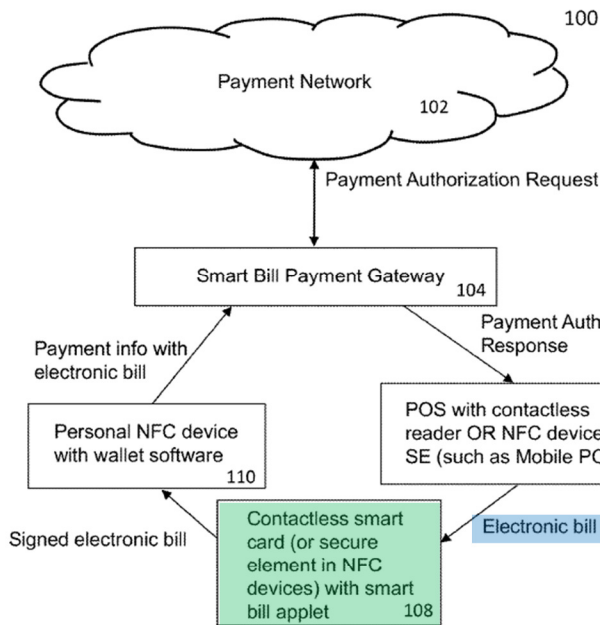
FIG. 1A
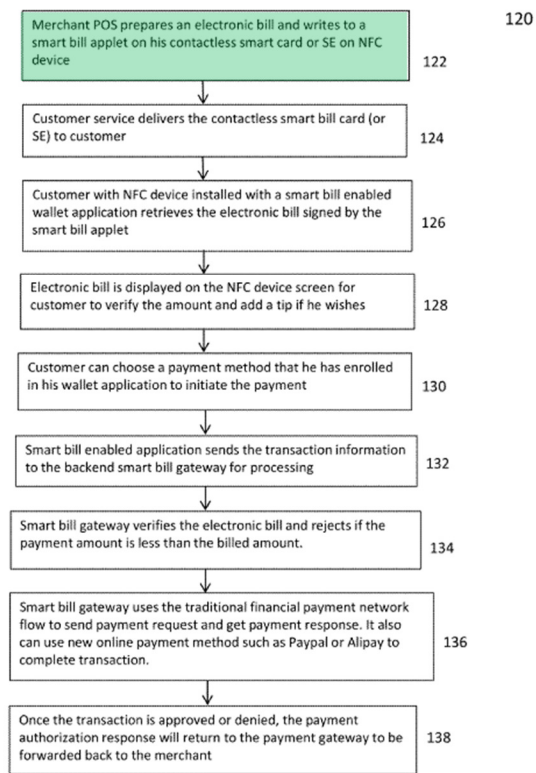
FIG. 1B

GOOG-1001, Figs. 1A, 1B (GOOG-1003, ¶60).

The two pre-AIA applications, the '653 and the '832, necessarily lack written description support for storing "account and bank information" of the "merchant" in the tag because each application fails to disclose storing *any* merchant information on a tag. GOOG-1003, ¶61. At best, the pre-AIA applications disclose storing *customer* information in a mobile device tag that is read by the merchant POS device. *See, e.g.*, GOOG-1029, [0113] ("The cell phone is equipped with a contactless interface (e.g., ISO 14443 RFID) that allows the cell phone to act as a tag."), [0174]; GOOG-1003, ¶61.

The pre-AIA '802 provisional also does not disclose "account and bank information" on the tag. As mentioned above, the disclosure is limited to Figures 1A and 1B and a different (high-level) description than the description introduced in the post-AIA '601 Patent. This general description includes a bulleted list of information stored on the "Contactless Smart Card" (*i.e.*, tag) shown in Fig. 1A (Fig. 1 in the provisional), but "account and bank information" of the merchant is not on that list.[3] *See* GOOG-1030, 8-11; GOOG-1003, ¶62.

Accordingly, because none of the pre-AIA applications provide § 112 support for claims 6 and 15, these claims have an effective filing date after March 16, 2013. GOOG-1003, ¶¶59-62.

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[3] The only disclosure of anything remotely related to "account and bank information" is a bullet point noting that "necessary information needed to conduct the payment" is included in the "Payment Information." GOOG-1030, 10-11. But, as shown in Fig. 1A, such "Payment info" flows from the "Personal NFC device" (*i.e.*, consumer's mobile device) to the "Payment Gateway," and is *not* included in the "Contactless Smart Card" (*i.e.*, tag). *Id.* at 8; GOOG-1003, ¶62.

B.   The '046 Patent's lack of written description for subject matter added by amendment creates PGR eligibility.

The '046 Patent is eligible for PGR for the independent reason that

limitations added to claim 12 during prosecution lack written support in any

application, pre-AIA or otherwise. As part of the E-Purse Amendment during

prosecution, the applicants added subject matter to claim 12 that lacks written

description support in the as-filed specification of the '046 Patent. Claim 12 (and

its dependents) are only entitled to the filing date of the '046 Patent itself, June 2,

2015 (post-AIA). *See* PGR2015-00023, Paper 8 at 2-3 (PTAB Feb. 22, 2016)

(under 35 U.S.C. § 100(i)(1)(A), the effective filing date of a claim with an

unsupported amendment is the "actual filing date of the application").

1.   The specification does not describe a payment gateway configured to cause the balance in the e-purse to be reduced, as required by claim 12.

In the E-Purse Amendment, applicants amended claim 12 to recite: "wherein

the payment gateway is configured to cause the balance in the e-purse reduced by

the amount." GOOG-1002, 156. Prior to the amendment, the payment gateway's

role post-payment was limited to sending a message to the POS device:

12. (*Currently amended*) A method for mobile payment, the method comprising:

generating a set of data in a point of sale (POS) device, the data including an electronic invoice and settlement information with a merchant associated with the POS device;

embedding the data directly to a tag;

presenting the tag to ~~the~~ a mobile device;

causing the mobile device to capture the data from the tag, wherein the mobile device executes an installed application therein to retrieve an amount in the electronic invoice from the data and generate a payment request in response to the captured data, the payment request is denied in the mobile device when the amount is more than a balance of an electronic purse (e-purse) maintained locally in the mobile device, the payment request is ~~being~~ sent to a payment gateway when the amount is less than a balance of an electronic purse (e-purse) maintained locally in the mobile device ~~includes a total amount combining an additional amount added by a user of the mobile device and the amount expressed in the electronic invoice~~; and

receiving a message in the POS device directly from the payment gateway that the electronic invoice has been settled ~~but for the total amount more than the amount expressed in the electronic invoice~~, wherein the payment gateway is configured to cause the balance in the e-purse reduced by the amount~~send the message directly to the POS device when an amount equivalent to the total amount is deducted from an account associated with the user of the mobile devices~~.

GOOG-1002, 156 (annotated); GOOG-1003, ¶166. The as-filed specification does not support the idea that the payment gateway causes the e-purse balance to be reduced. GOOG-1003, ¶¶166-167, 161-164.

Neither of the two embodiments in the '046 Patent that describe e-purse payments—Figures 1A-1B and Figures 6A-6D—support the concept of the

payment gateway reducing the e-purse balance. Only the former embodiment even discloses a payment gateway (element 104 in Fig. 1A), but such disclosure is devoid of any suggestion that the payment gateway 104 reduces the balance in the e-purse on the mobile device 110, as shown below:
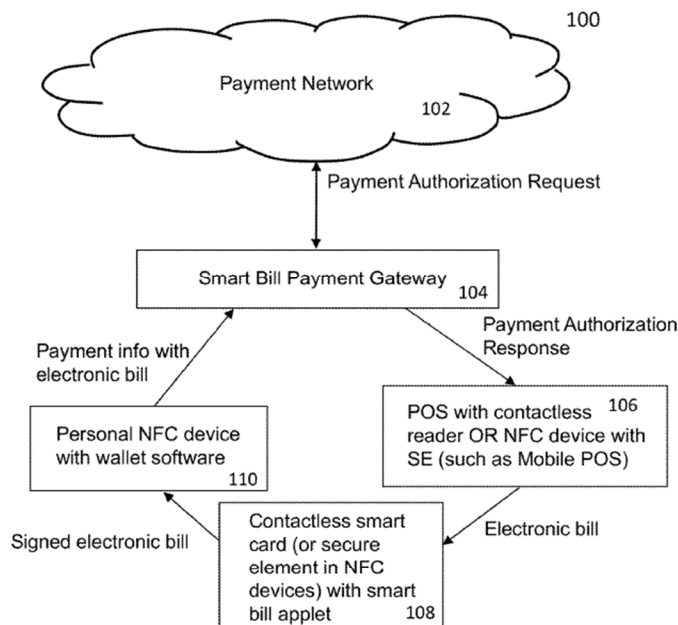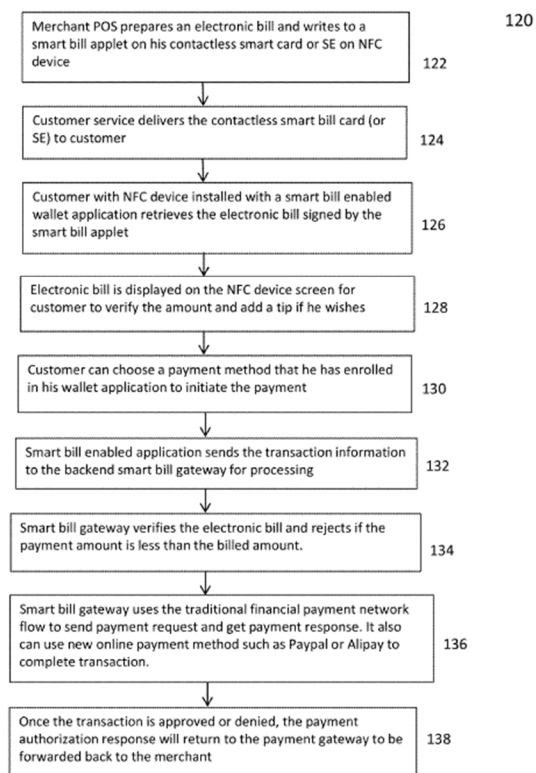

GOOG-1001, Figs. 1A and 1B

Figure 1B describes only that the payment gateway receives a payment request (132), verifies the amount against a balance (134), forwards the payment request to a payment network (136), and forwards an authorization response to the merchant (138). GOOG-1001, Fig. 1B; 7:54-8:24; GOOG-1003, ¶169. There is no

disclosure of the payment gateway sending any sort of communication to the mobile device, much less reducing the balance in the mobile device's e-purse. See, e.g., Fig. 1A (showing the only one-way communication from the mobile device to the payment gateway). The embodiment of Figures 1A-1B is silent with respect to a balance maintained in the customer's e-purse. GOOG-1003, ¶169. An e-purse is mentioned only to the extent that it is a payment option on the mobile device. GOOG-1001, 7:48-52 ("[T]he customer may choose to settle the charge with an electronic wallet or purse (a.k.a., e-purse) already created in the mobile device….").

Even if the embodiment of Figures 6A-D included a payment gateway (which it does not), it lacks support for the balance-reduction amendment in claim 12. As described in association with step 660 in Figure 6C, the POS manager 632—not the payment gateway—"deducts or debits the purchase amount from the e-token of the e-token enabled device 636 at 660." GOOG-1001, 20:41-44; 20:13-14 (process 650 is "performed by the POS Manager"); GOOG-1003, ¶170. As described in association with step 680 in Figure 6D, the e-purse applet debits the e-token. *Id.*, Fig. 6D, Step 680 ("Send the debit request to e-token enabled device to debit e-token."); *id.*, 21:51-55.

The as-filed specification does not disclose a payment gateway "configured to cause the balance in the e-purse reduced by the amount," as recited in claim 12. Because this concept was added to claim 12 after the '046 Patent application was filed, claim 12 is only entitled to the filing date of the '046 Patent itself, June 2, 2015. 35 U.S.C. § 100(i)(1)(A).

C.   Summary of Effective Filing Dates

For the reasons in Sections V.A.-V.B above, independent claims 1 and 12 (and thus claims 1-17) of the '046 Patent each have a post-AIA effective filing date. Each cited reference below predates the AIA effective date. *See* Section IX.

VI.   CLAIM CONSTRUCTION

In a PGR, claims shall be construed "in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." 37 C.F.R. § 42.200(b). The Board only construes the claims to the extent necessary to resolve the underlying controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017). All terms should have their plain and ordinary meaning.

A.   *"e-purse"*

Claims 1 and 12 recite the term "e-purse." The '046 Patent does not provide an express definition of the term "e-purse." GOOG-1003, ¶66. For purposes of resolving the underlying controversy of this proceeding, the claim language sufficiently describes the requirements of the "e-purse." Claims 1 and 12 recite that the e-purse is "maintained locally in the mobile device." GOOG-1001, 25:42-43 (claim 1), 27:2-3 (claim 12). Claims 1 and 12 recite that there is a "balance in the e-purse." GOOG-1001, 25:47 (claim 1), 25:62 (claim 1), 27:1-2 (claim 12), 27:10 (claim 12). Claim 12 further recites that the e-purse balance may be "reduced" by the payment gateway. GOOG-1001, 27:11-13 (claim 12); *id*., 26:26-29 (claim 7).

When the claims were amended to recite the "e-purse," the applicants noted that "[a]s described in Para [0033] and [0037], a customer may choose to settle the charge *with an electronic wallet or purse (a.k.a., e-purse)* already created in the mobile device." GOOG-1002, 160. Paragraphs [0033] and [0037] (corresponding to GOOG-1001, 7:46-52 and 8:25-30) do not distinguish between or ascribe any special meanings to "e-wallet" and "e-purse." Accordingly, "e-purse" does not have a special meaning other than what is required by the claims.

The prior art cited in this petition discloses the claimed characteristics of an "e-purse," so the underlying controversy—whether claims 1-17 are unpatentable—

can be resolved without the need to provide an express construction. *See Nidec*

Motor Corp., 868 F.3d at 1017.

VII. LEVEL OF ORDINARY SKILL IN THE ART

A POSITA, as of March 29, 2013, would have had a working knowledge of

mobile payment techniques pertinent to the '046 Patent, including art describing

mobile payment techniques.[4] A POSITA would have had a bachelor's degree in

computer science, computer engineering, or an equivalent, and one year of

professional experience relating to mobile payment. Lack of professional

experience can be remedied by additional education, and vice versa. GOOG-1003,

¶¶16-20.

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[4] To the extent the Board finds some claims have an effective filing date of March

29, 2013, rather than June 2, 2015, Mr. Gray's analysis of all claims is based upon

the earlier date. For the purposes of the challenges in this petition, there is no

meaningful difference in the knowledge of a POSITA between those two dates.

GOOG-1003, ¶18.

VIII. RELIEF REQUESTED AND THE REASONS FOR THE REQUESTED RELIEF

Petitioner asks that the Board institute a trial and cancel the challenged

claims as unpatentable in view of the analysis below.

IX. IDENTIFICATION OF CHALLENGES

This petition challenges the patentability of claims 1-17 of the '046 Patent as

follows:

Challenge	Claims	Ground
#1	1-5 and 12-14	35 U.S.C. § 103 over **Moshal** in view of **Jogu** and **Dessert**
#2	6, 15, and 16	35 U.S.C. § 103 over **Moshal** in view of **Jogu**, **Dessert**, and **Ohlhausen**
#3	7-11 and 17	35 U.S.C. § 103 over **Moshal** in view of **Jogu**, **Dessert**, **Ohlhausen**, and **Aabye**

US 2014/0310117 to Moshal (GOOG-1005, "**Moshal**") was published on

Oct. 16, 2014, was filed on Nov. 12, 2012, and is prior art under 35 U.S.C. §

102(a)(2).

Japanese Patent No. 4901053 B2 (GOOG-1014) was published on March

21, 2012 and is prior art under 35 U.S.C. § 102(a)(1). A certified English language

translation of Japanese Patent No. 4901053 B2 is referenced herein as "**Jogu**"

(GOOG-1006).

US 9,027,827 to Dessert (GOOG-1007, "**Dessert**") was issued on May 12, 2015 and filed Feb. 3, 2012. **Dessert** is prior art under at least 35 U.S.C. § 102(a)(2).

US 2014/0365371 to Ohlhausen (GOOG-1008, "**Ohlhausen**") was published on Dec. 11, 2014, was filed on December 7, 2012, and is prior art under 35 U.S.C. § 102(a)(2).

US 2010/0211507 to Aabye (GOOG-1009, "**Aabye**") was published on Aug. 19, 2010 and is prior art under 35 U.S.C. § 102(a)(1).

X. THE BOARD SHOULD INSTITUTE POST-GRANT REVIEW

A. The challenges presented in this petition are not cumulative to prosecution of the '046 Patent

The Board should not deny institution under § 325(d). None of the prior art asserted in the grounds was presented to or considered by the Examiner during prosecution. Under the first part of the *Advanced Bionics* framework, the Board should not deny institution. IPR2019-01469, Paper 6 at 8-9 (PTAB Feb. 13, 2020) (precedential).

During prosecution, different "Dessert" and "Aabye" references (US 2013/0246528 (GOOG-1032), US 8,601,266 (GOOG-1033), and US 2010/0211504 (GOOG-1034)) were cited by the Examiner. GOOG-1001, code (56); GOOG-1002, 577-578. Petitioner cites to teachings of Dessert (GOOG-

1007) (e.g., Figures 10C and 10D in the analysis of limitations [1.4] and [1.11], and in Section XI.A.4) that are not contained in the other Dessert publication (GOOG-1032). The different "Aabye" references do not contain the combined teachings of a "secure channel" between the mobile device and a payment gateway, and the mobile device having a secure data storage element, as cited in the analysis for claims 7, 9, 10, and 17 below (see Challenge 3). Therefore, none of the prior art cited in the grounds was presented to the Examiner.

B. The *Fintiv* factors favor institution

The Patent Owner has asserted the '046 Patent against Petitioner in the Eastern District of Texas. The Board balances six factors in considering discretionary denial under § 314(a) when there is parallel litigation. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential). None of the *Fintiv* factors weigh in favor of discretionary denial.

1. Factor 1 is neutral (possibility of a stay).

A stay pending the outcome of an IPR in the co-pending district court litigation has not been requested. If an IPR is instituted, a stay would be appropriate under the legal standard in the Eastern District of Texas. *See Cypress Lake Software, Inc. v. Samsung Elecs. Am., Inc.*, No. 6:18-cv-00030 (E.D. Tex. Aug. 28, 2019) (order granting stay).

The litigation is at a very early stage. Patent Owner filed its litigation Complaint on August 21, 2020, and served Petitioner on September 16, 2020. GOOG-1041, GOOG-1042. This Petition was filed within approximately three months of Petitioner being served, and within four months of the filing of the Complaint. At the time of filing, the District Court had not yet held a scheduling conference or issued a scheduling order. Therefore, a stay pending IPR would be appropriate due to the early stage of the district court trial.

The Board should not infer the outcome of a motion to stay. *Intel Corp. v. VLSI Tech. LLC*, IPR2020-00158, Paper 16, at 7 (PTAB May 20, 2020); *Apple Inc. v. Fintiv, Inc.,* IPR2020-00019, Paper 15, at 12 (PTAB May 13, 2020). Thus, this factor is neutral on discretionary denial.

2. Factor 2 favors institution (proximity of trial date to final written decision).

No trial date has been set in the district court litigation. The district court has not issued a Docket Control Order yet.[5] Therefore, this factor favors institution.

To the extent that the district court schedules a trial near the time when the Board would issue a final written decision, *Fintiv* states that this factor does not implicate the decision whether to institute "if the trial date is at or around the same time as the projected statutory deadline." IPR2020-00019, Paper 11, at 6. Further, Judge Gilstrap has postponed all jury trials that were scheduled to occur between December 2020 and February 2021 due to the COVID health crisis. GOOG-1043–GOOG-1045 (representative orders). The postponement of jury trials for three months may have a cascading effect on trials scheduled after February 2021. Further, Petitioner filed a Motion to Transfer the litigation to the Northern District of California, where Google is head-quartered and where the majority of the named

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[5] If the district court issues a Docket Control Order before the Board issues its institution decision, Petitioner respectfully requests an opportunity to address the impact of the schedule set forth in the Docket Control Order.

inventors reside. That motion remains pending. If granted, the transfer would further extend the trial schedule. Because of the uncertainty of the trial date, this factor weighs against discretionary denial. *See Sand Revolution*, IPR2019-01393, Paper 24 (June 16, 2020) (informative) (uncertainty over trial date weighed against discretionary denial).

3. Factor 3 favors institution (investment in parallel proceeding).

The litigation is in its early stages, and the investment in it has been minimal. The parties have not exchanged preliminary positions on claim construction, invalidity, or alleged infringement, and fact and expert discovery have not begun. Further, there is no evidence that the district court will conduct a *Markman* hearing or issue a *Markman* ruling before the prospective date for the institution decision in this proceeding. The early stage of the litigation weighs against discretionary denial.

4. Factor 4 favors institution (overlap in issues).

Petitioner has not served its preliminary invalidity contentions in the district court proceeding (nor has a date been set for service of such contentions). Accordingly, there is no overlap between this proceeding and the district court proceeding. Consequently, this factor weighs in favor of institution, or is at the very least neutral.

5. Factor 5 is neutral (overlap in parties).

Petitioner is a defendant in the litigation. GOOG-1041, as is true of most Petitioners in IPR and PGR proceedings. In *Google LLC v. Parus Holdings, Inc.*, IPR2020-00846, Paper 9 (Oct. 21, 2020), the panel noted that this factor "could weigh either in favor of, or against, exercising discretion to deny institution, depending on which tribunal was likely to address the challenged patent first." *Id.* at 21. This factor is neutral because it is unknown which tribunal will address the validity of the '046 Patent first.

6. Factor 6 favors institution (other circumstances).

As discussed in Section XI, the prior art presented in this Petition renders the challenged claims unpatentable as obvious. The merits of Petitioner's arguments are strong, and this factor favors institution. *Fintiv*, Paper 11 at 14-15 ("[I]f the merits of a ground raised in the petition seem particularly strong on the preliminary record, this fact has favored institution.")

As such, because each of the *Fintiv* factors are either neutral or weigh against discretionary denial, and because Petitioner diligently filed this Petition within approximately three months of service in the District Court litigation, institution should not be denied on discretionary factors.

XI. IDENTIFICATION OF HOW THE CLAIMS ARE UNPATENTABLE

A. Challenge #1: Claims 1-5 and 12-14 are rendered obvious by Moshal in view of Jogu and Dessert.

1. Overview of Moshal

Like the '046 Patent, Moshal is directed to a bill payment system and method in which a customer uses a payment instrument such as an e-wallet on a mobile device to pay a bill. GOOG-1005, Abstract, ¶42 (customer can use an e-wallet on a mobile device as a payment instrument). With reference to Figure 1 below, Moshal discloses that a **mobile device** ("code scanner") 106 (e.g., smartphone (GOOG-1005, ¶38)), scans a tag (payment QR code) provided by a **POS device** 104 to obtain merchant information and invoice information to pay for a transaction. GOOG-1005, ¶¶38, 54-55. The mobile device transmits a payment request to a **payment gateway** (application server) 102 upon the customer's verification of the invoice and selection of a payment instrument on the **mobile device**, and the payment gateway notifies a **merchant terminal** 108 and the **mobile device** whether a requested transaction is successful. GOOG-1005, ¶¶38, 55-57.
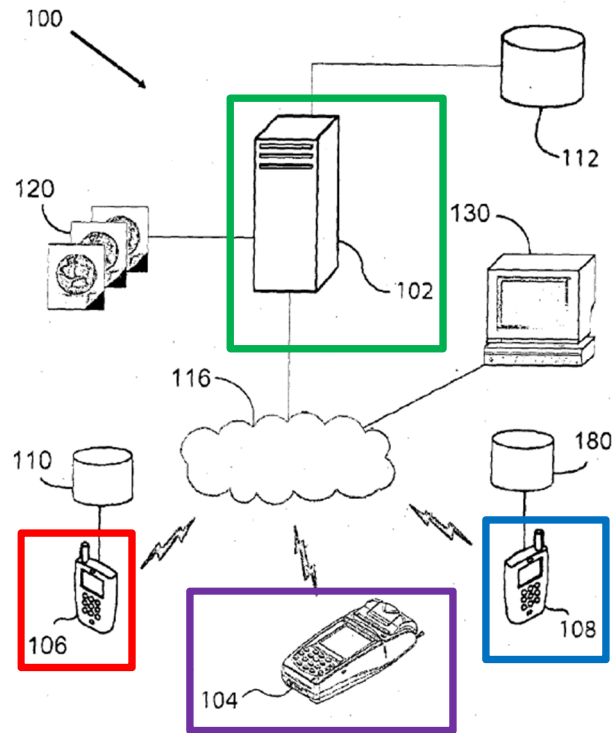
GOOG-1005, Fig. 1 (annotated); GOOG-1003, ¶179

With reference to Figure 7 below, Moshal discloses that a scanner

application of the mobile device scans a tag (QR code) (step 708) provided by the

POS terminal (step 700), and decodes the tag to obtain all the merchant and invoice

information contained in the tag (step 710). GOOG-1005, ¶¶54-55. The scanner

application of the mobile device then displays the invoice, including all the bill

details (step 712) for the customer to (i) review and amend the bill as necessary

(e.g., add a tip) (step 714), (ii) select a payment instrument such as an e-wallet

(step 716), and (iii) accept the bill for payment (step 718). GOOG-1005, ¶55.

Then, after the user accepts the bill for payment, the mobile device transmits a

payment request to the payment gateway (step 720). GOOG-1005, ¶55. Like the

'046 Patent, Moshal discloses that the payment gateway determines whether

payment is successful or unsuccessful, notifies the mobile device of this

determination (step 728 or step 732), and notifies the merchant terminal when

payment is successful (step 734). GOOG-1005, ¶¶56-57.
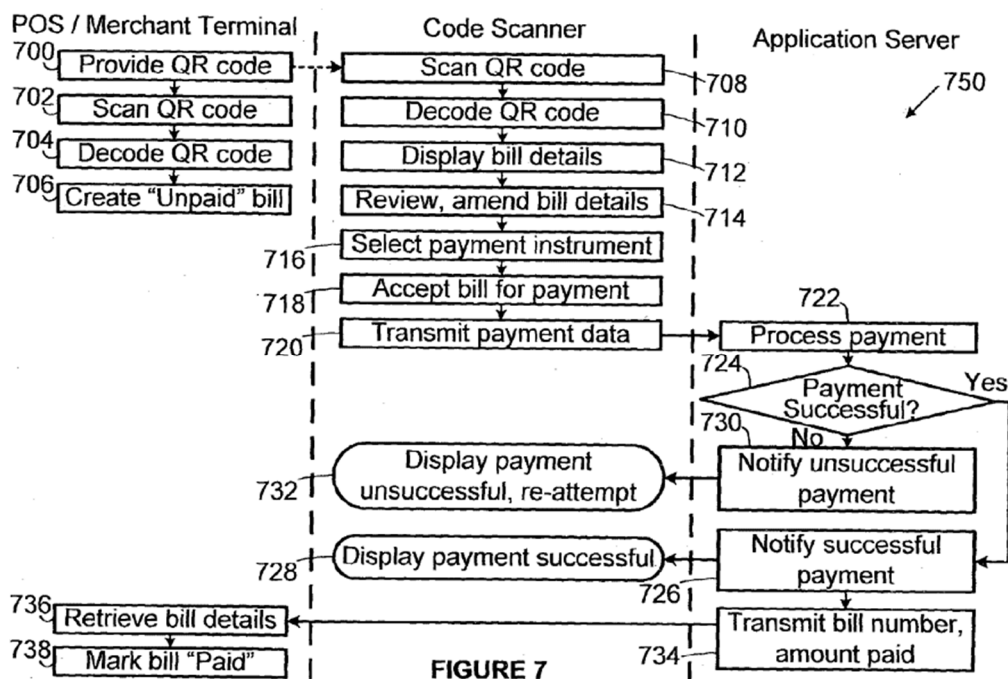
GOOG-1005, Fig. 7

With reference to Figure 8 below, Moshal discloses that the mobile device

user may select an e-wallet (e-purse as claimed in the '046 Patent) to pay the

amount (including optional tip) for an invoice 800 displayed on the mobile device

by selecting this payment option (icon 824 on displayed invoice 800). GOOG-1005, ¶59 ("**Icon 824 can be used to select an e-wallet with which to pay**….").
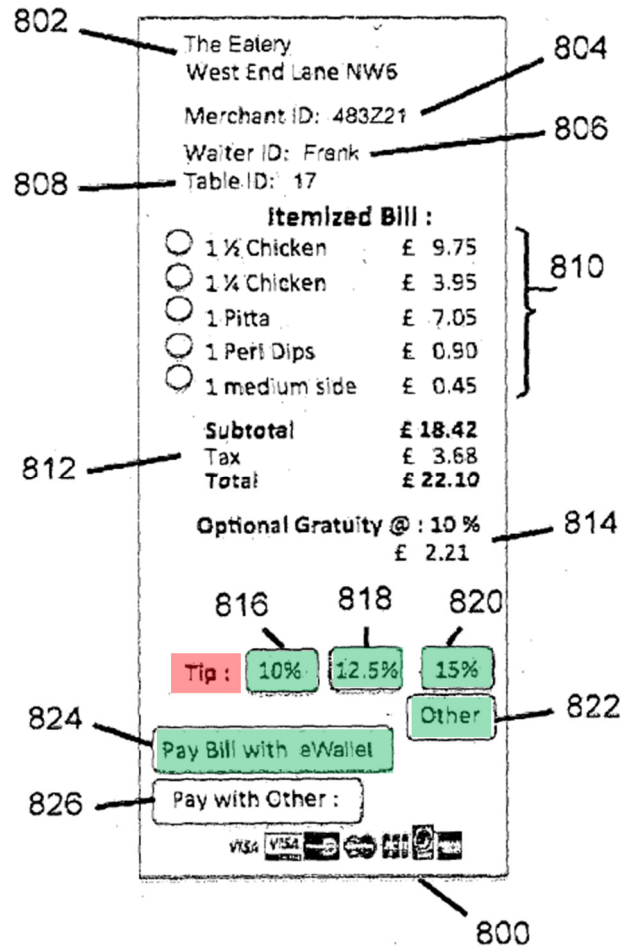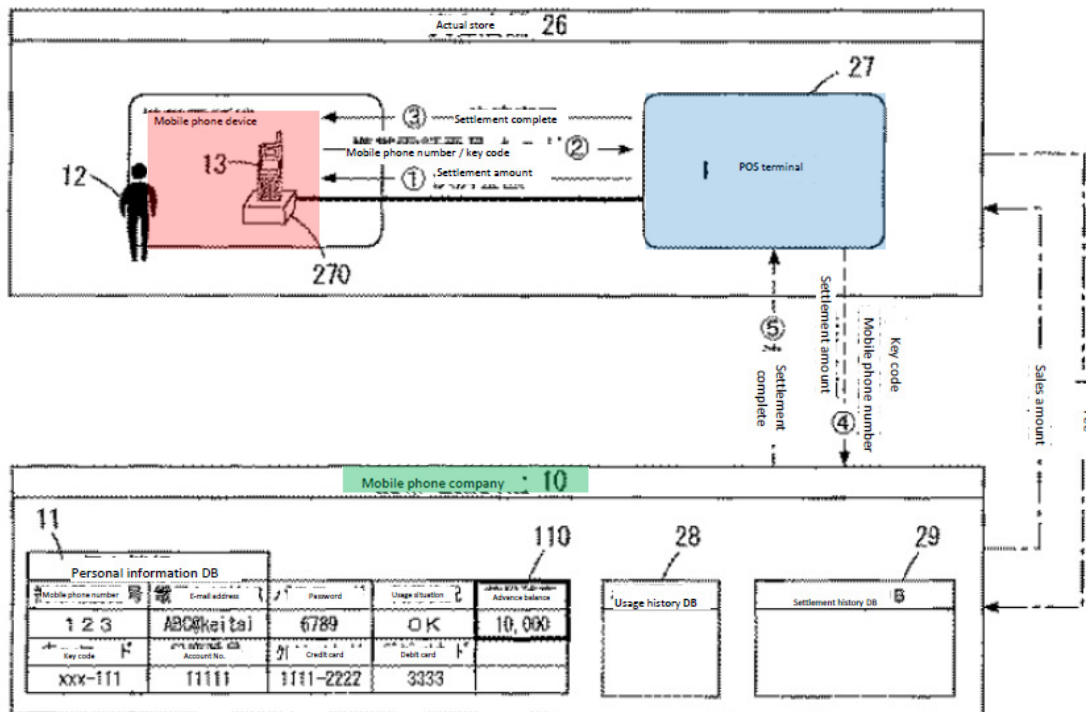

GOOG-1005, Fig. 8 (annotated); GOOG-1003, ¶181

2. Overview of Jogu

Like the '046 Patent, Jogu discloses a mobile payment system and method in which a customer uses an e-wallet application on a mobile device to conduct a

transaction. GOOG-1006, 3 ("[T]he user can make a payment by using the mobile phone like a wallet."). Figure 6 of Jogu below shows use of the **mobile device** 13 at a brick-and-mortar store 26 to conduct a transaction with a **POS terminal** 27. GOOG-1006, 6. If payment is successful, a **payment gateway** (mobile phone server) 10 notifies the **POS terminal** 27 of completion of the payment. GOOG-1006, 6.
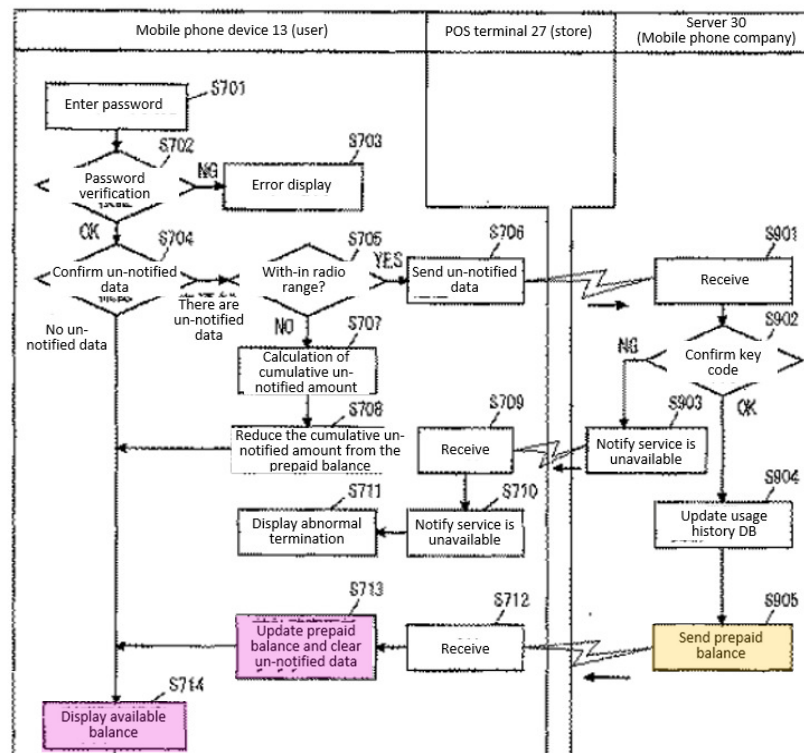

GOOG-1006, Fig. 6 (annotated); GOOG-1003, ¶182

Like the '046 Patent, Jogu discloses that a balance is maintained locally on the mobile device. GOOG-1006, 4 ("**The mobile phone stores the balance** of the transmitted virtual account. The user uses this mobile phone instead of a wallet to make a payment at a virtual store or at a brick-and-mortar store on the Internet."). With reference to Figure 21 below, Jogu discloses that the mobile device informs the user of the current balance before conducting a transaction (step 714 in Fig. 21). GOOG-1006, 14. The current balance on the mobile device is updated by the payment gateway 30, which informs the mobile device of the current balance (step 905 in Fig. 21). GOOG-1006, 13.

FIG. 21

GOOG-1006, Fig. 21 (annotated excerpt); GOOG-1003, ¶184.

Like the '046 Patent, Jogu discloses that when the mobile device initiates a transaction, the mobile device first performs a local balance check without sending a payment request to the payment gateway 10. As shown in the excerpts of Figures 22 and 23 below, Jogu discloses the following operations performed in the mobile device:

(1) the mobile device determines whether the balance maintained locally on the mobile device is sufficient for a transaction (step S718 in Fig. 22; screen D18 displayed on mobile device in Fig. 23);

(2) if the balance is insufficient, the transaction is denied by the mobile device (S719 in Fig. 22; screen D19 displayed on mobile device in Fig. 23); and

(3) if the balance is sufficient, the mobile device initiates a payment request by transmitting the mobile phone number and a payment code to the POS terminal (S720 in Fig. 22; screen D20 displayed on mobile device in Fig. 23). GOOG-1006, 14.
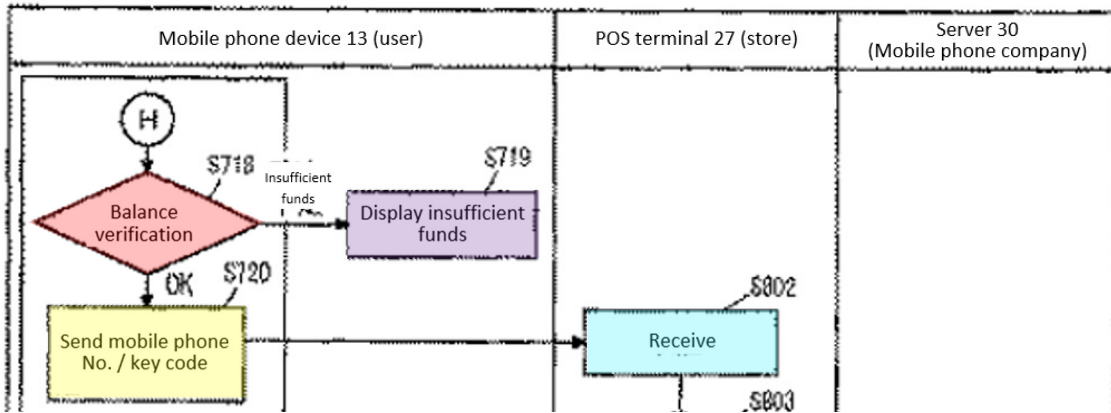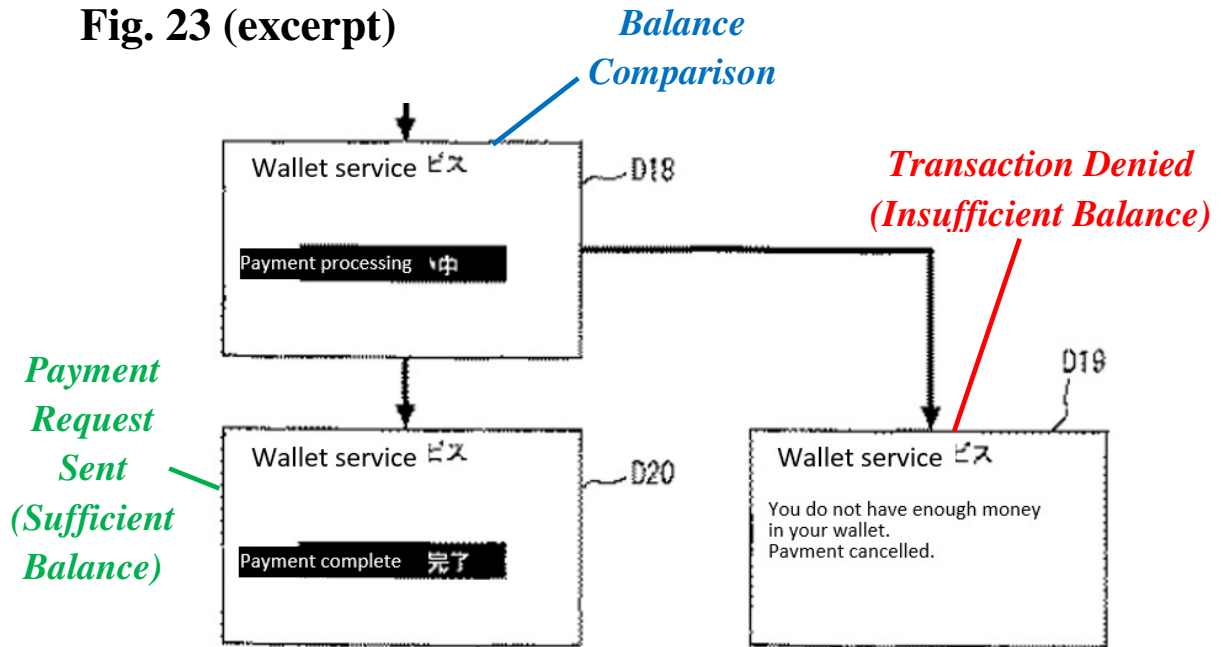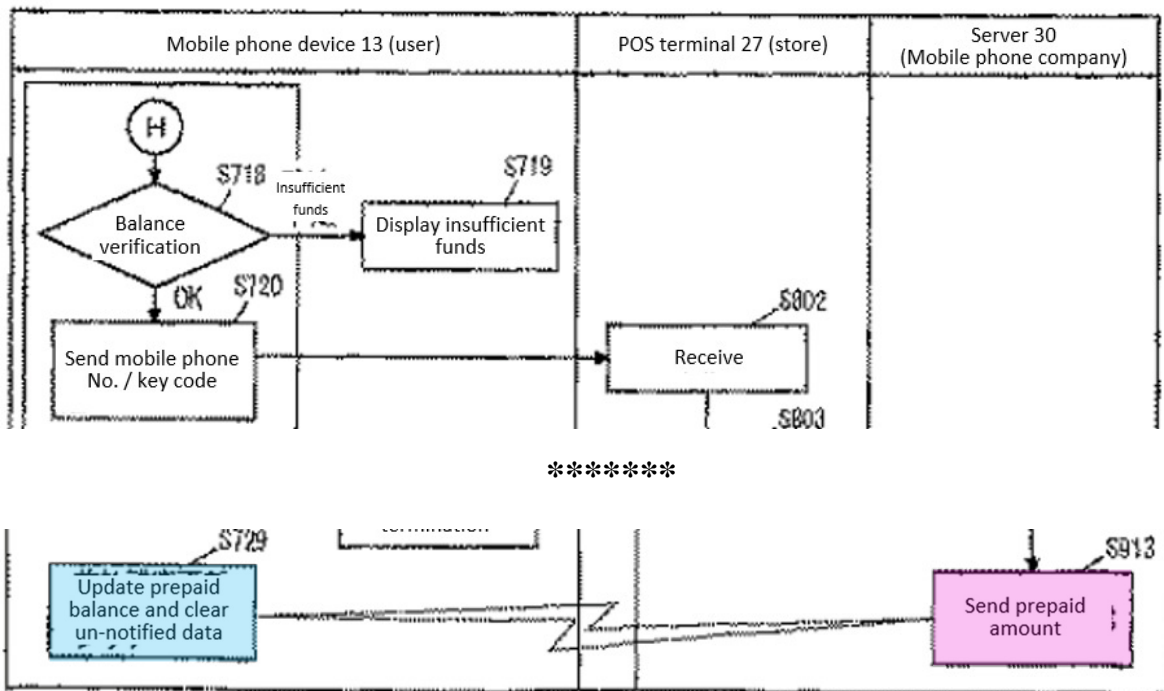
FIG. 22

Fig. 23 (excerpt)

Balance Comparison

Transaction Denied (Insufficient Balance)

Payment Request Sent (Sufficient Balance)

GOOG-1006, Figs. 22 and 23 (annotated excerpts); GOOG-1003, ¶185.

Like the '046 Patent, Jogu discloses that the balance on the mobile device is reduced by the payment gateway (server) 30 after a successful transaction. As shown in Figure 22 below, after a payment is successfully made with the balance on the mobile device, the payment gateway 30 sends the updated balance to the mobile device (step 913), causing the balance to be reduced on the mobile device (step S729 in Fig. 22). GOOG-1006, 14-15.


FIG. 22

GOOG-1006, Fig. 22 (annotated excerpt); GOOG-1003, ¶186.

As another example, with reference to Figure 73 below, Jogu discloses that the mobile device, upon being notified of an updated balance by the payment

gateway 30, displays confirmation of a successful transaction, and the updated balance (step S432). GOOG-1006, 34 ("[T]he data processing unit 131 displays the remittance completion on the display device 137 together with the virtual account balance after the remittance (S432).").

F I G. 7 3
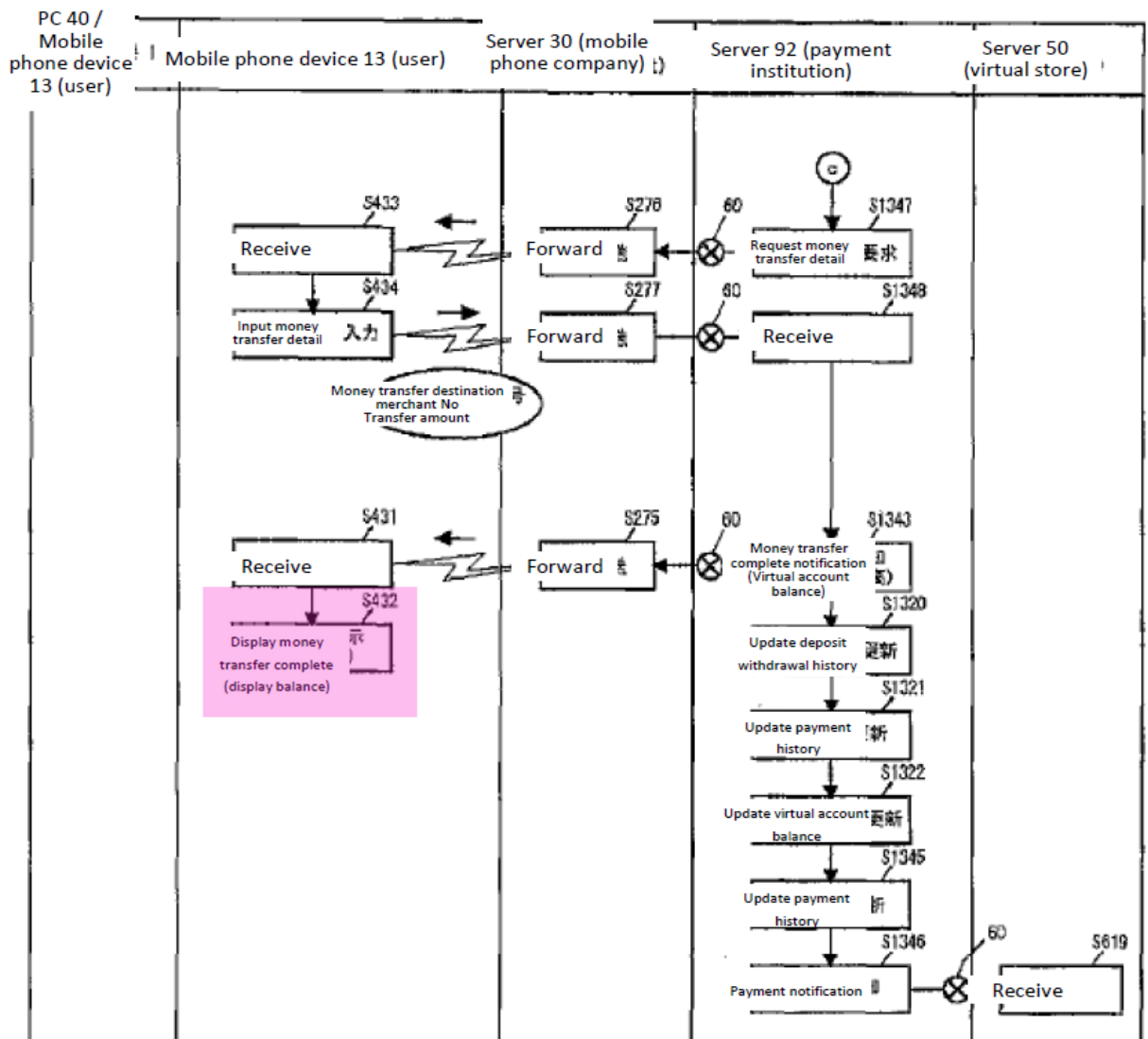
GOOG-1006, Fig. 73 (annotated excerpt), GOOG-1003, ¶187

3.   Overview of Dessert

Like the '046 Patent, Dessert is directed to a bill payment system and method in which a customer uses a payment instrument such as an e-wallet on the customer's mobile device to conduct a transaction upon scanning tags containing information about a desired product or service. With reference to Figure 1 below, the mobile device (portable computing device (PCD) 100) utilizes a personalized shopping/payment application 113 to scan machine-readable tags 124 located within the premises of a merchant and/or coupled to products for sale. GOOG-1007, 4:67-5:3 (application 113 stored on mobile device), 5:4-16 (mobile device uses application 113 to scan machine-readable tags 124), 6:1-14 (tags provided in merchant premises and/or on products).
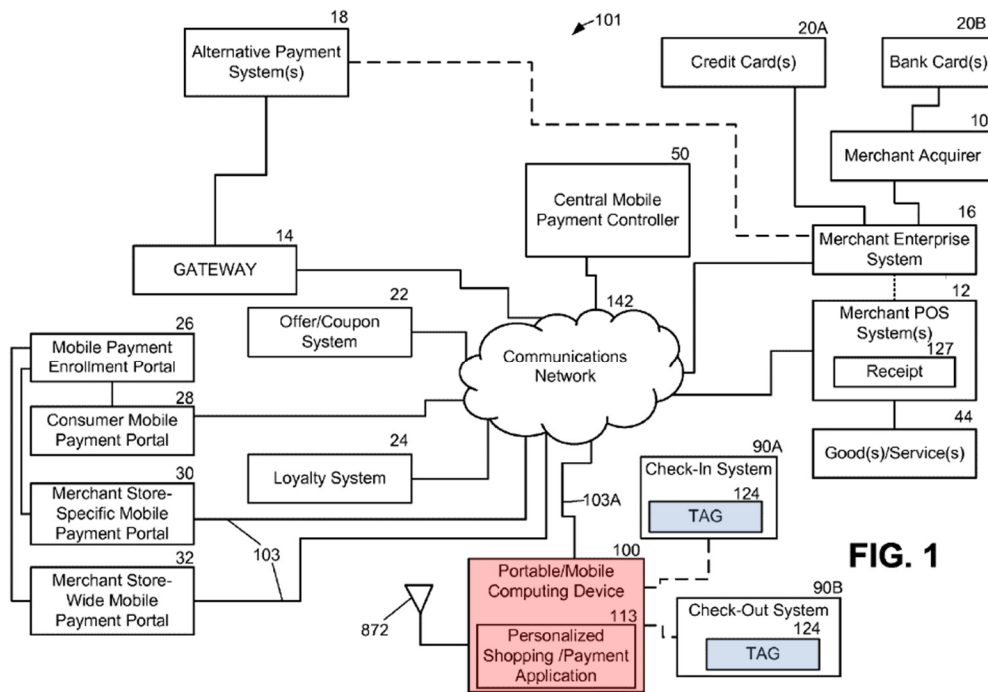
GOOG-1007, Fig. 1 (annotated); GOOG-1003, Section X.C

Dessert discloses that it was well known to use tags 124 that are to be scanned by a camera of the mobile device 100, or tags 124 that are to be read using RFID or near field communication (NFC).

> The machine-readable tag 124 may comprise a machine-readable code 222 which may be scanned with a camera 848 (See FIG. 8) of the PCD 100….[O]ther machine-readable codes are included within the scope of the invention and may include contactless technologies, such as near-field communications (NFC),…and RFID cards as understood by one of ordinary skill in the art.

GOOG-1007, 6:20-34.

4. Motivation to Modify Moshal with Jogu and Dessert

As described above in Sections XI.A.1, Moshal discloses an e-wallet that is maintained locally on the user's mobile device, selectable by the user to conduct a transaction with the mobile phone, and used by the mobile device to submit a payment request to a payment gateway. GOOG-1005, ¶¶52-59. Moshal does not explicitly disclose the implementation details of its e-wallet because such details were well known in the art. GOOG-1003, ¶189. Jogu, for example, discloses many of these e-wallet implementation details already known to POSITAs. Dessert further illustrates that it was well known to conduct wireless transactions with a mobile device by interchangeably using either scannable tags or NFC/RFID tags. GOOG-1007, 6:20-34. Moshal, Jogu, and Dessert are analogous art to the '046 Patent because they are each in the same field of endeavor as the '046 Patent (method and system for mobile payments), and they are each pertinent to a particular problem allegedly solved by the '046 Patent ("using a mobile device to quickly settle the payment at a point of sale (POS)"). GOOG-1001, 1:40-44; GOOG-1003, ¶190.
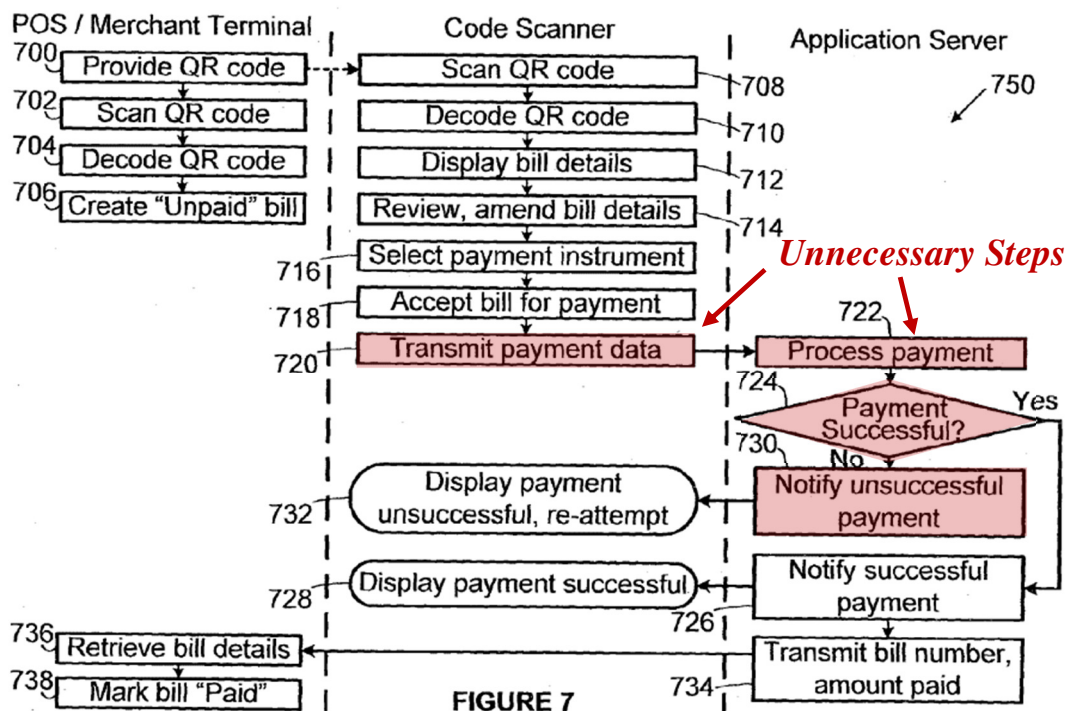
> a. **A POSITA would have been motivated to modify Moshal to include a local balance verification, as taught by Jogu.**

Moshal does not explicitly disclose some of the implementation details of its e-wallet because such features were well known in the art. Jogu discloses that one such known e-wallet technique is local balance verification. GOOG-1006, Fig. 22 (S718). A POSITA would have been motivated to utilize Jogu's local e-wallet balance verification technique in Moshal's e-wallet. GOOG-1003, ¶191.

Jogu teaches that its e-wallet maintains a balance on the mobile device that may be used for brick-and-mortar store purchases. GOOG-1006, 4 ("**The mobile phone stores the balance** of the transmitted virtual account. **The user uses this mobile phone instead of a wallet to make a payment**…."); GOOG-1003, ¶192.

As described above in Section XI.A.2, Jogu discloses that, before a payment request is transmitted, the mobile device verifies whether the amount of the transaction is more than the balance maintained on the mobile device (step S718 in Fig. 22). GOOG-1006, 14. This verification occurs locally on the mobile device without sending a payment request to the payment gateway. *Id*. If the balance is insufficient to pay for the transaction, the transaction is denied (step S719 in Fig. 22, screen D19 displayed on the mobile device). GOOG-1006, 14-15; GOOG-1003, ¶193.

A POSITA would have been motivated to modify Moshal to utilize the conventional e-wallet techniques taught by Jogu in the operation of Moshal's e-wallet. GOOG-1003, ¶194. Modifying Moshal so that the mobile device conducts a local balance verification before transmitting a payment request to a payment gateway or a merchant terminal, as taught by Jogu, would save time and frustration for the user if the e-purse has insufficient funds to conduct a transaction. For example, as disclosed by Jogu (step S718 in Fig. 22 ("Balance Verification")), it was known for a user's mobile device to first check the balance of a payment option in an e-wallet before a payment request is transmitted from the mobile device. Further, checking to see whether the e-purse has sufficient funds to pay for a transaction prevents unnecessary communications between the user's mobile device and the POS terminal or payment gateway. GOOG-1003, ¶194-195. For example, modifying Moshal to perform Jogu's local-balance-verification feature in Moshal's mobile device before step 720 (transmit payment request) would make steps 720, 722, 724 and 730 unnecessary when the mobile device determines that the balance is insufficient for the amount on the invoice, as shown in annotated Figure 7 below.

POS / Merchant Terminal

700 Provide QR code
702 Scan QR code
704 Decode QR code
706 Create "Unpaid" bill

Code Scanner

Scan QR code 708
Decode QR code 710
Display bill details 712
Review, amend bill details 714
716 Select payment instrument
718 Accept bill for payment
720 Transmit payment data

Unnecessary Steps

Application Server

750

722 Process payment
724
730 Payment Successful? Yes
No
Notify unsuccessful payment

732 Display payment unsuccessful, re-attempt

728 Display payment successful
726

Notify successful payment

736 Retrieve bill details
738 Mark bill "Paid"

734 Transmit bill number, amount paid

FIGURE 7

GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶195

Accordingly, it would have been obvious to incorporate the well-known balance-

check feature of Jogu in Moshal's e-wallet to beneficially inform the user of the

mobile device if the e-purse has sufficient funds to pay for a requested transaction.

GOOG-1003, ¶¶196-198 (citing GOOG-1007, 39:29-42, Figs. 10C and 10D (user

informed on mobile device display whether the balance of the user's account is

sufficient to pay for a requested transaction)).

Modifying Moshal to check the balance of Moshal's e-wallet (pay with e-

wallet icon 824 in Fig. 8) before the mobile device transmits a payment request

(step 720 in Fig. 7 of Moshal) involves the combination of prior art elements (an e-

wallet with a updatable balance, as taught by Jogu, with Moshal's e-wallet

payment options that are managed on a user's mobile device) according to known

methods (checking the balance before payment, as taught by Jogu) to yield

predictable results (checking the balance before payment, as taught by Jogu). *KSR*

Int'l. Co. v. Teleflex Inc., 550 U.S. 398, 416 (2007). Further, this obvious

modification involves the use of a known technique (an e-wallet with a balance

that is checked before a payment request is made) to improve similar methods

(Moshal's method of contactless payment with a mobile device) in the same way.

See KSR, 550 U.S. at 401. In addition, Jogu's teaching of an e-wallet with a

balance provides a teaching, suggestion, and motivation in support of the

combination, because Jogu teaches a mobile device performing a local balance

verification before transmitting a payment request, and thereby provides a

motivation to implement an e-wallet in this way. *Id*., 418-19. Accordingly, a

POSITA would have been motivated to modify Moshal to check the balance of

Moshal's e-wallet before the mobile device transmits a payment request, as taught

by Jogu. GOOG-1003, ¶199. A POSITA would have had a reasonable expectation

of success in making this modification because Jogu teaches how to perform this

local balance verification. GOOG-1006, Fig. 22 (step S718), 14 ("[T]he data

processing unit 131 [of the mobile device] determines whether or not the received

payment amount is within the current balance (S718)."). Further, with reference to

Figure 7 below, Moshal discloses that a verification is performed (by the user)

(step 718) before a payment request is transmitted from the mobile device to the

payment gateway (step 720). GOOG-1005, ¶55. Therefore, a POSITA would

have had a reasonable expectation of success in implementing the local balance

verification taught by Jogu before Moshal's mobile device transmits a payment

request to the payment gateway (step 720). GOOG-1003, ¶200.
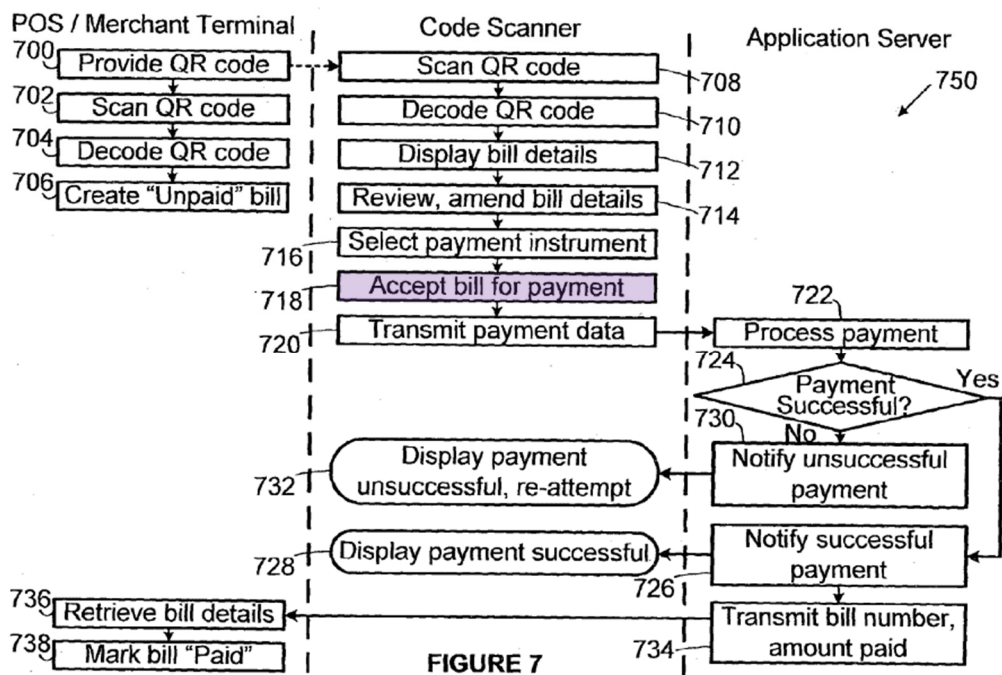
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶200.

b.   A POSITA would have been motivated to modify Moshal so the payment gateway reduces the e-wallet balance of the mobile device, and the mobile device displays the updated balance.

As described above in Section XI.A.4.a, a POSITA would have been

motivated to modify Moshal so that the mobile device's e-wallet has a balance, as

taught by Jogu. GOOG-1003, ¶201. With reference to Figure 7 below, Moshal

discloses that the payment gateway determines whether payment is successful (step

724), and the mobile device displays when payment is successful (step 728) after

being notified by the payment gateway (step 726). Moshal, however, does not

expressly indicate what specific information is displayed when payment is

successful. In view of Jogu's disclosure of conventional e-wallet techniques

including maintaining a balance on a mobile device, a POSITA would have been

motivated to modify Moshal so that the payment gateway reduces the balance upon

a successful payment, as taught by Jogu, and the mobile device displays the

updated (reduced) balance, as part of the notification of a successful payment, as

also taught by Jogu. GOOG-1003, ¶202.
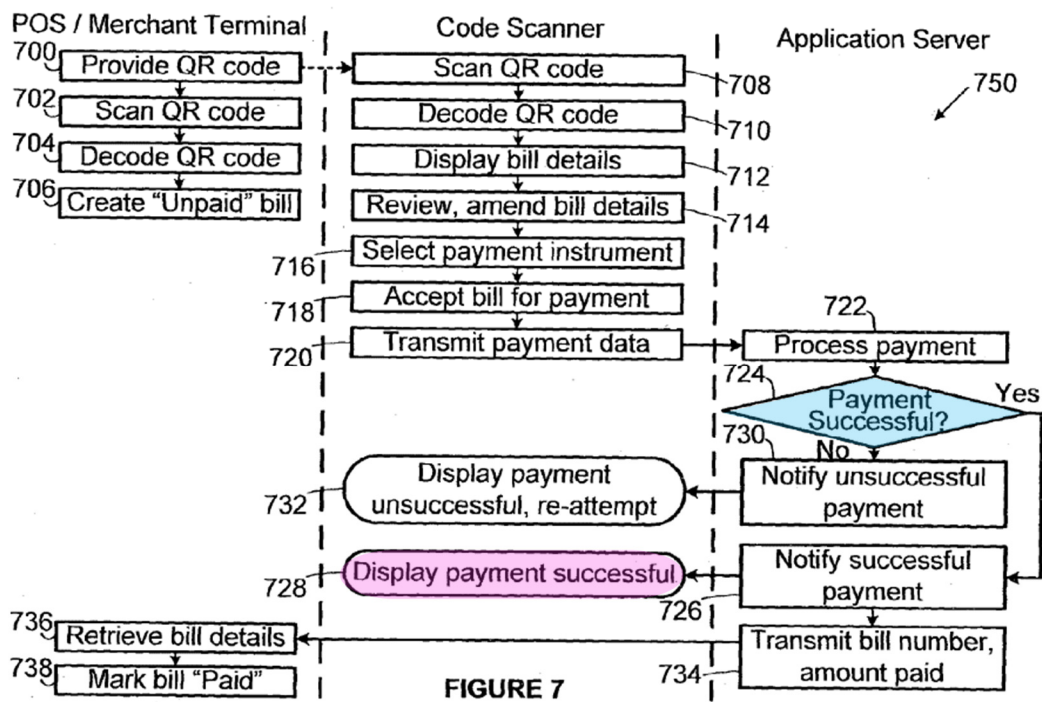
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶202

As described above in Section XI.A.2, Jogu discloses that (i) the current balance is displayed on the mobile device before a transaction is conducted (step S714 in Fig. 21), (ii) the payment gateway updates (reduces) the balance after a transaction is successfully conducted and notifies the mobile device (S913 in Fig. 22), and (iii) the mobile device displays the balance after it is updated by the remote gateway (step S729 in Fig. 22, step S432 in Fig. 73). GOOG-1006, 14, 34; GOOG-1003, ¶203.

A POSITA would have been motivated to utilize the conventional e-wallet techniques taught by Jogu with Moshal's e-wallet, for the reasons presented above

in Section XI.A.4.a. As part of this, a POSITA would have been motivated to modify Moshal such that the payment gateway (application server) reduces a balance in Moshal's e-wallet when a successful transaction is made, as taught by Jogu. GOOG-1006, 14, steps S913 and S729 in Fig. 22. Doing so provides a number of advantages that would be recognized by a POSITA. GOOG-1003, ¶204. First, providing an accurate balance on the mobile device provides more information to the user of the mobile device to conduct transactions within the user's desired spending limits. With reference to Figure 21 below, Jogu discloses that the current balance is displayed on the mobile device (S714) upon being notified of the current balance by the payment gateway (S905). GOOG-1006, 14-15; GOOG-1003, ¶204.

FIG. 21
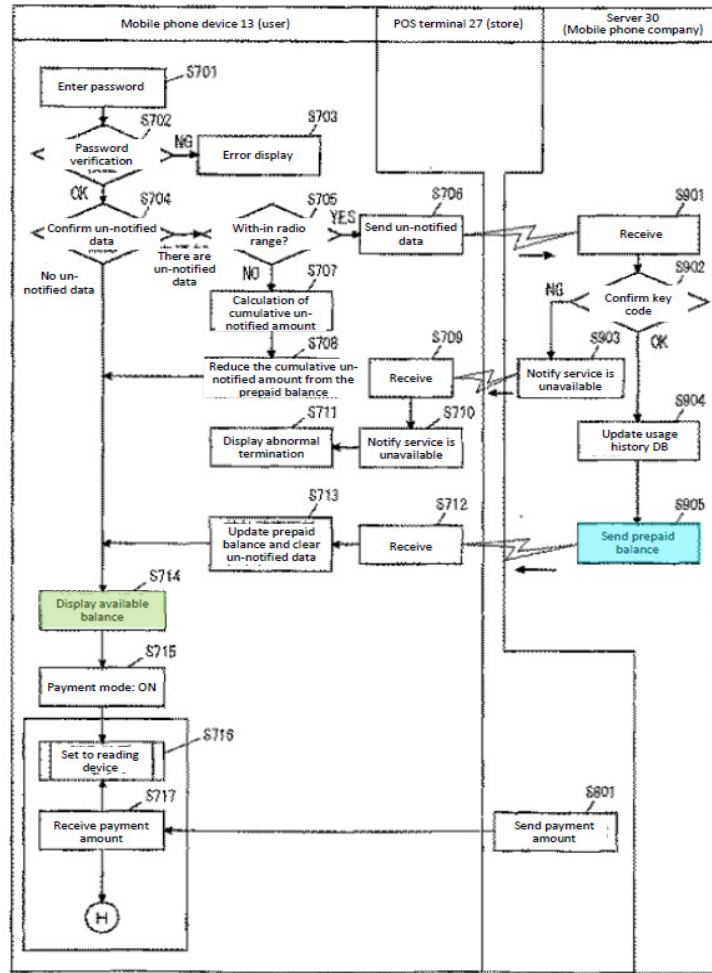
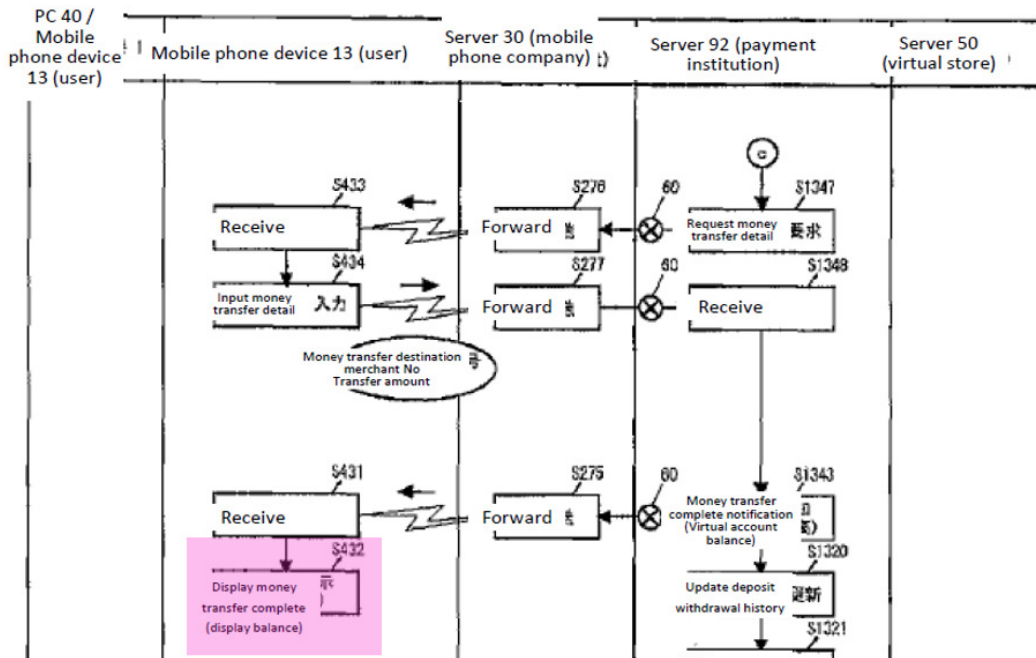GOOG-1006, Fig. 21 (annotated); GOOG-1003, ¶204

Below is an enlarged version of the pertinent portion of Fig. 21:
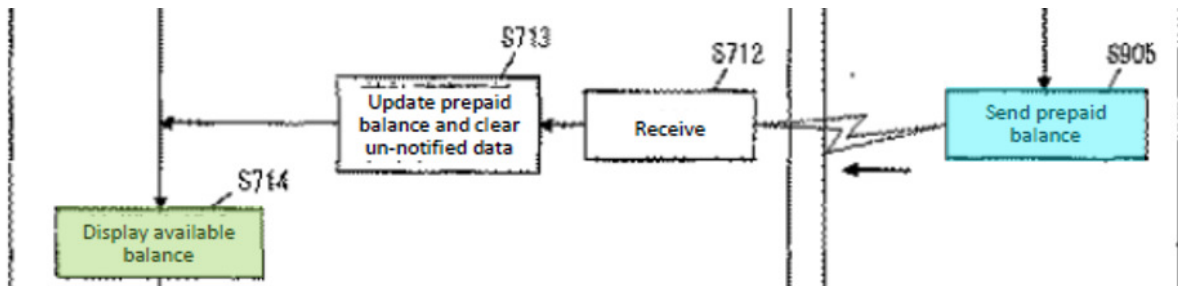
GOOG-1006, Fig. 21 (enlarged, annotated excerpt)

Further, with reference to Figure 73 below, Jogu discloses that after the payment gateway updates the balance of a mobile device following a successful transaction, and notifies the mobile device of the updated balance, the mobile device displays both (1) a confirmation of the successful transaction and (2) the updated balance (step S432). GOOG-1006, 34 ("[T]he data processing unit 131 displays the remittance completion on the display device 137 together with the virtual account balance after the remittance (S432)."); GOOG-1003, ¶205.

FIG. 73

GOOG-1006, Fig. 73 (annotated excerpt), GOOG-1003, ¶205

As another example, Dessert discloses that the current balances for several accounts are displayed on the user's mobile device to assist the user in determining which account to use to pay for a transaction. In particular, with reference to Fig. 10C below, Dessert discloses that available balances for payment method #1 and payment method #2 are displayed on screen 202J of the mobile device in association with the bill received by the mobile device. GOOG-1007, 39:29-42 ("FIG. 10C is a diagram of a screen 202J that shows merchant information 228 relevant to a transaction and payment options 218B for a purchase along with a plurality of payment options that may be selected by an operator of the PCD

100…**The payment options may also provide or display any remaining balances available with credit card accounts as well as balances available for debit accounts so that the operator will know if there are sufficient funds in respect of accounts to pay for the final bill**.”). GOOG-1003, ¶206.
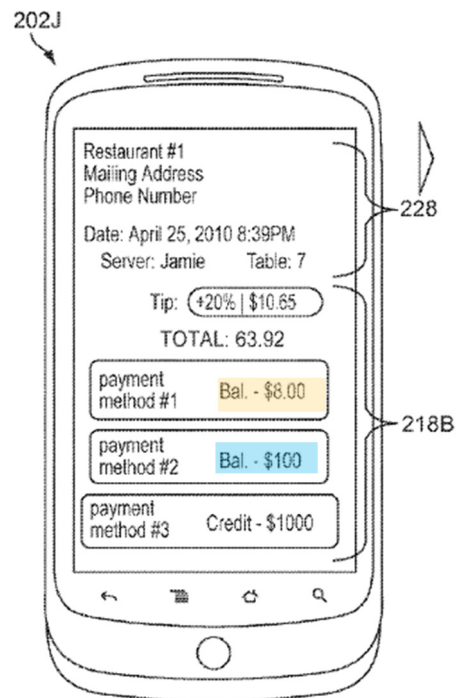

FIG. 10C

GOOG-1007, Fig. 10C (annotated); GOOG-1003, ¶206

In view of Jogu's disclosure that the current balance on the mobile phone is reduced by the payment gateway (S913 in Fig. 22) in response to a successful transaction, and the well-known feature of displaying the current balance on a mobile phone, as disclosed by Jogu (step S432 in Fig. 73) and Dessert ("Bal." in

Fig. 10C), a POSITA would have been motivated to modify Moshal to display a confirmation in the mobile device that the balance in the e-purse of the mobile device has been reduced by the total amount of the conducted transaction. GOOG-1003, ¶207. Displaying such a confirmation would advantageously inform the user of the mobile device that the transaction was successful, which Moshal teaches (step 728 in Fig. 7), and would also inform the user of the current balance (after the successful transaction) so that the user knows whether the e-purse has a sufficient balance to conduct another transaction. GOOG-1003, ¶208 (citing GOOG-1009, ¶¶51-53 (user receives notification of current balance on user's mobile device after a transaction is conducted)).

Accordingly, a POSITA would have been motivated to modify Moshal to display confirmation in the mobile device that the balance in the e-purse has been reduced by the total amount, as disclosed by Jogu and Dessert, because doing so not only provides confirmation to the mobile device user that the transaction was successfully completed, but it also advises the mobile device user how much remains in the user's balance so that the user can make more informed decisions about conducting future transactions with the user's mobile device. GOOG-1003, ¶209.

Modifying Moshal to update (reduce) the balance maintained in the mobile device after the completion of a successful transaction involves the combination of prior art elements (an e-wallet with a updatable balance, as taught by Jogu, with Moshal's e-wallet payment options that are managed on a user's mobile device) according to known methods (updating the balance after payment, as taught by Jogu) to yield predictable results (checking the balance before payment, as taught by Jogu). *KSR*, 550 U.S. at 416. Further, this obvious modification involves the use of a known technique (an e-wallet with a balance that is updated after a transaction with the e-wallet is conducted) to improve similar methods (Moshal's method of contactless payment with an e-wallet on a mobile device) in the same way. *KSR*, 550 U.S. at 401. In addition, Jogu teaches a payment server updating the balance maintained on the mobile device, and thereby provides a motivation to implement an e-wallet with an updatable balance in this way. *Id.* at 418-19. Accordingly, a POSITA would have been motivated to modify Moshal to update (reduce) the balance in the mobile device after the completion of a successful transaction. GOOG-1003, ¶210. A POSITA would have had a reasonable expectation of success in making this modification because Jogu teaches how to perform this balance update after a transaction is conducted. GOOG-1006, 14, steps S913 and S729 in Fig. 22; GOOG-1003, ¶211.

c. A POSITA would have been motivated to modify Moshal to utilize different types of conventional, machine-readable tags.

As described above in Section XI.A.1, Moshal discloses that the mobile device scans a tag provided by a POS device to obtain merchant information and invoice information to pay for a transaction. GOOG-1005, ¶¶38, 54, 55. A POSITA would have been motivated to modify Moshal to utilize any type of conventional, machine-readable tags, including QR codes, RFID tags, or NFC tags. These types of machine-readable tags were known to be interchangeable and functionally equivalent, as disclosed by Dessert, for example. GOOG-1003, ¶¶212, 218-219 (citing GOOG-1007, 6:20-34; GOOG-1010, ¶¶52, 137).

With reference to Figure 4 below, Moshal discloses that the mobile device (code scanner) 106 includes a scanner 156 and a scanner app 164, which is installed in the data storage 158 of the mobile device and executed on the mobile device. GOOG-1005, ¶41; GOOG-1003, ¶213.
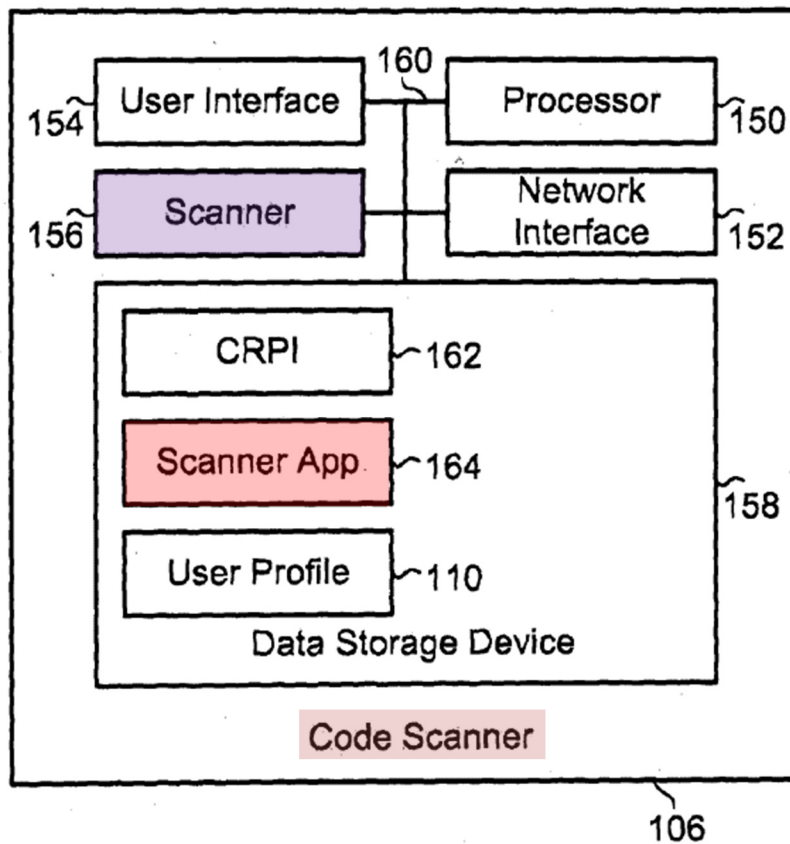
GOOG-1005, Fig. 4 (annotated); GOOG-1003, ¶213

With reference to Figure 3 below, Moshal discloses that the mobile device uses the scanner 156 and the scanner app 154 to scan QR (Quick Response) codes 999, which "can be encoded as a payment QR code," to conduct a transaction (e.g., pay a restaurant bill at the end of a meal). GOOG-1005, ¶¶47, 48, 54-55; GOOG-1003, ¶214.
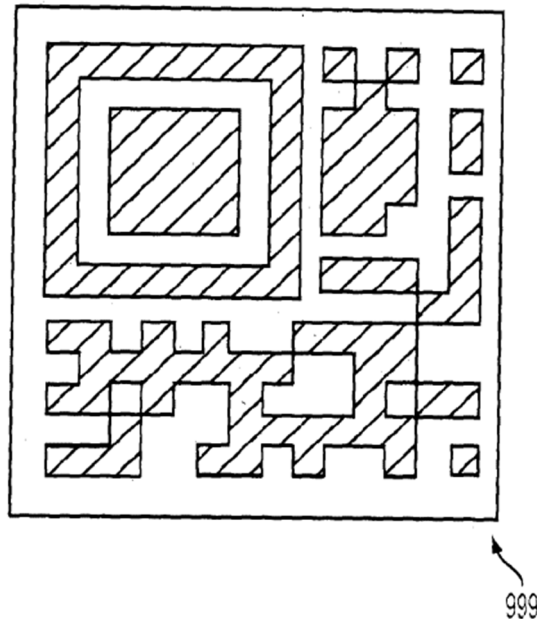
FIGURE 3

GOOG-1005, Fig. 3

Moshal discloses that the mobile device uses the scanner 156 and scanner app 154 to scan tags that include QR codes. GOOG-1005, ¶¶47, 48, 54-55. A POSITA would have understood that a QR code is a "tag" that can be read (scanned), as taught by Moshal. GOOG-1003, ¶215. It was well known in the art to read other types of tags that, like the QR tags utilized in Moshal, contain encoded information to be read for use in conducting contactless transactions. For example, in the mobile payment context, Dessert refers to QR tags interchangeably with both RFID tags and NFC tags. With reference to Figure 1 below, Dessert discloses that a mobile device (PCD) 100 with a personalized shopping/payment application 113 installed thereon scans machine-readable tags 124 that are

provided on the premises of a merchant or coupled to individual products within a

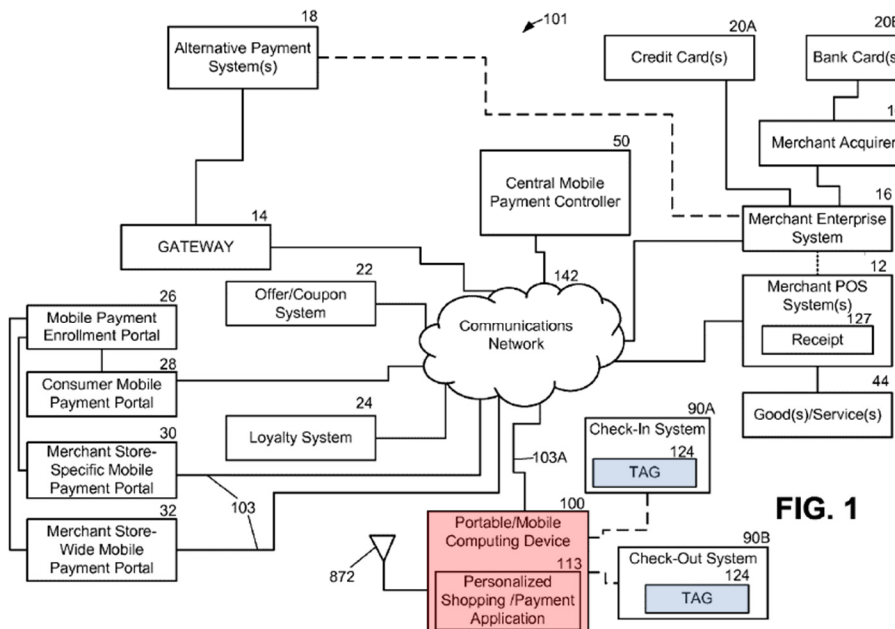merchant's premises. GOOG-1007, 5:4-16, 6:1-14; GOOG-1003, ¶216.

GOOG-1007, Fig. 1 (annotated); GOOG-1003, ¶216

Dessert discloses that the tags 124 may be physical tags to be scanned by a

scanner of the PCD 100, or physical tags to be read using RFID or NFC. GOOG-

1007, 6:20-34 ("**The machine-readable tag 124 may comprise a machine-**

readable code 222 which may be scanned with a camera 848 (See FIG. 8) of the

PCD 100....**[O]ther machine-readable codes are included within the scope of**

the invention and may include contactless technologies, such as near-field

communications (NFC),…and RFID cards as understood by one of ordinary

skill in the art."). Thus, a POSITA would recognize that scannable tags of Moshal

are functionally equivalent and interchangeable with tags that are to be read by other contactless technologies such as RFID or NFC. GOOG-1003, ¶217. Therefore, a POSITA would have been motivated to modify Moshal so that the mobile device, utilizing the scanner app and scanner, would be configured to read any other conventional tags such as RFID tags or NFC tags, in view of the interchangeability of these conventional types of tags, as taught by Dessert. GOOG-1007, 6:20-34, 7:17-20, 9:60-66, 11:65-12:7; GOOG-1003, ¶219-220. A POSITA would have been motivated to modify the scanner app and scanner (hereinafter referred to as "modified scanner") on Moshal's mobile device to scan/read different types of conventional, machine-readable tags (hereinafter "modified tag") (e.g, QR codes, RFID tags, NFC tags), as disclosed by Dessert. *Id*. Such a modification of utilizing functionally equivalent conventional tags achieves the same result of encoding information in a readable format. GOOG-1003, ¶220 (citing GOOG-1010, ¶¶52, 137 (describing interchangeable use of QR tags, RFID tags, and NFC tags)).

5. Analysis

Claims 1-5 and 12-14 are obvious over Moshal in view of Jogu and Dessert. GOOG-1003, ¶178.

a. *Claim 1*

[1.0] A method for mobile payment, the method comprising:

With reference to Figure 7 below, Moshal discloses a method "to carry out payment of a bill at a merchant establishment." GOOG-1005, ¶21. In Moshal's method, a user utilizes a "mobile smartphone handset" (code scanner) to carry out the payment. GOOG-1005, ¶¶38, 52-57; GOOG, ¶222.
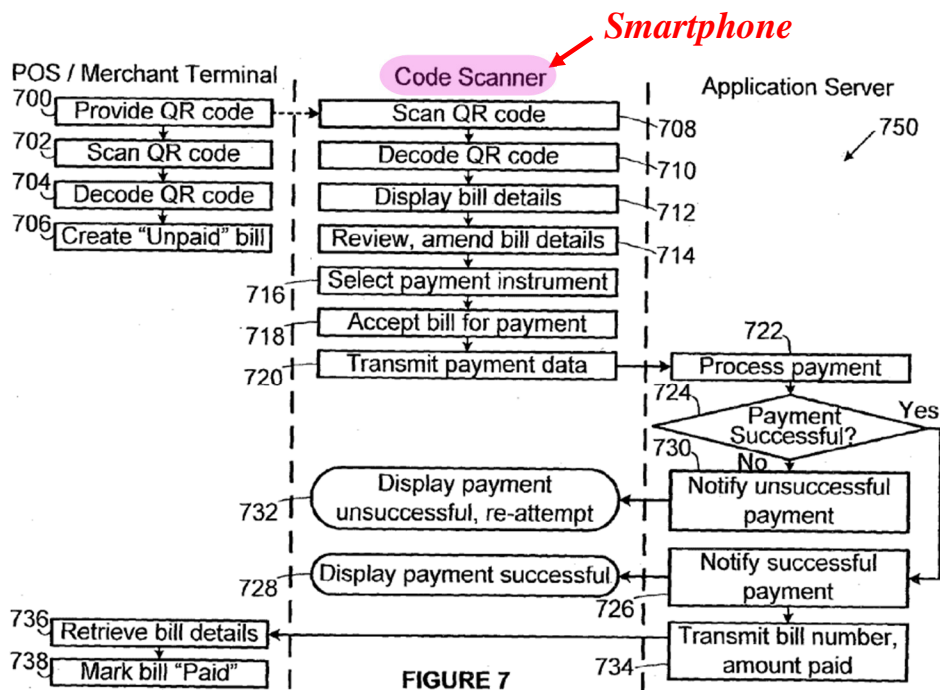
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶222

Therefore, Moshal teaches [1.0]. GOOG-1003, ¶223.

[1.1.1] causing a mobile device to capture data directly from a tag physically presented thereto,

Limitation [1.1.1] is rendered obvious by Moshal and Dessert. Moshal teaches a mobile device 106 that captures transaction data directly from a tag (QR code 999) (Fig. 3) presented to the mobile device (Fig. 7). Dessert teaches that it was known for mobile devices to capture data directly from conventional tags such as QR codes, RFID tags, and NFC tags. GOOG-1003, ¶224.

As described above in Sections XI.A.1 and XI.A.4.c, Moshal discloses that the mobile device 106 includes a scanner 156 and a scanner app 164 (Fig. 4) to scan QR codes 999 (Fig. 3) that are "encoded as a payment QR code." GOOG-1005, ¶¶41-42, 47-48; GOOG-1003, ¶225.
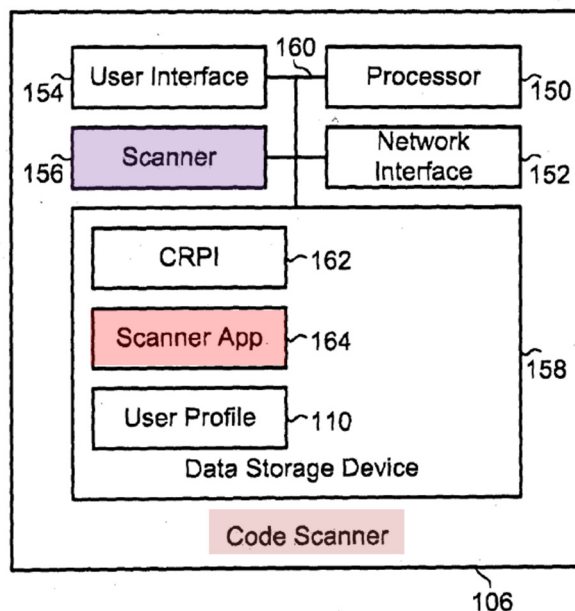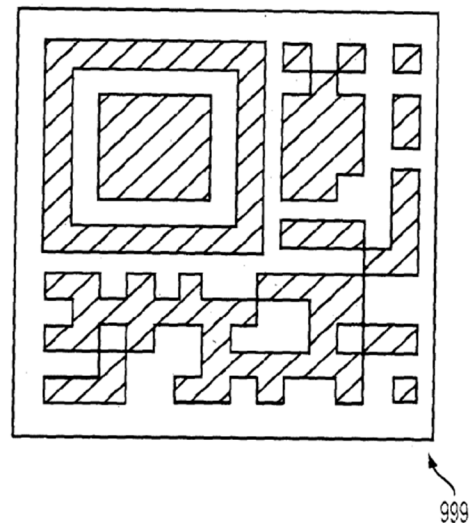

FIGURE 4

FIGURE 3

GOOG-1005, Fig. 4 (annotated), Fig. 3; GOOG-1003, ¶225

As shown in Figure 7 below, which is a set of functions that "can be performed to pay the restaurant bill" (GOOG-1005, ¶52), the mobile device scans a tag (step 708) that is physically presented to the mobile device user (step 700). GOOG-1005, ¶55 ("…**At block 708, the user can use the scanner app 164 and the scanner 156 to scan the payment QR code on the hardcopy of the bill.**"), ¶54 (tag includes, *inter alia*, "**all the details contained in the bill.**"); GOOG-1003, ¶226.

FIGURE 7
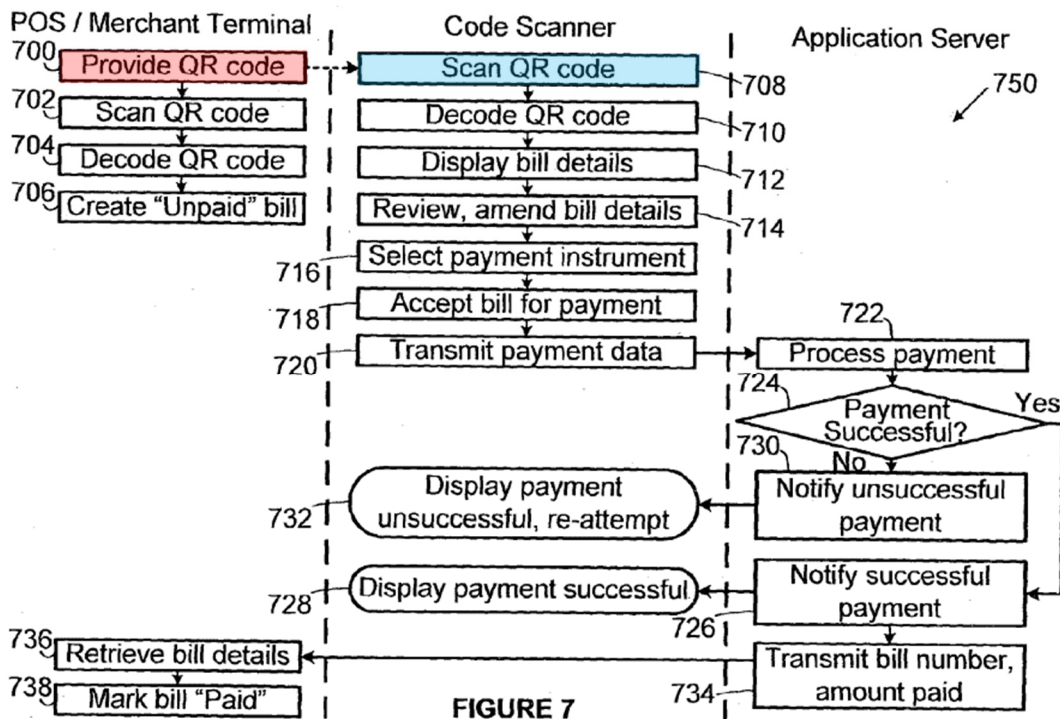
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶226

Thus, Moshal teaches that the mobile device is caused to capture data directly from a tag physically presented thereto. GOOG-1003, ¶227.

As described above in Section XI.A.4.c, to the extent that claim 1 is interpreted as requiring an unrecited feature of RFID tags or NFC tags, a POSITA would have been motivated to modify Moshal so that the mobile device, utilizing the modified scanner, would be configured to read any conventional tags such as QR tags, RFID tags or NFC tags, in view of the interchangeability of these conventional types of tags, as taught by Dessert. GOOG-1007, 6:20-34, 7:17-20, 9:60-66; GOOG-1003, ¶228 (citing GOOG-1010, ¶¶52, 137 (describing interchangeable use of QR tags, RFID tags, and NFC tags)). A POSITA would have found it obvious to utilize an RFID tag or NFC tag, as taught by Dessert, to store Moshal's invoice and merchant information so that it may be read by Moshal's modified scanner. GOOG-1003, ¶¶228-230.

Accordingly, [1.1.1] is rendered obvious by Moshal in view of Dessert. GOOG-1003, ¶231.

> **[1.1.2] wherein the tag receives the data directly from a POS device and allows the mobile device to capture the data,**

Limitation [1.1.2] is rendered obvious by Moshal and Dessert. Moshal teaches that the POS terminal produces the tag, and the tag is presented to the

mobile device for the mobile device to scan and capture the data encoded in the tag. As discussed above in Section XI.A.4.c, it would have been obvious to modify Moshal to utilize conventional types of contactless tags ("modified tag") such as QR codes, RFID tags, and NFC tags, as taught by Dessert. GOOG-1003, ¶232.

With reference to Figure 7 below, Moshal discloses that the POS terminal 104 prepares and presents the tag at step 700. GOOG-1005, ¶54-55 (tag provided to diner with bill). At step 708, the mobile device user "uses the scanner app 164 and the scanner 156 to scan [capture] the payment QR code on the hardcopy of the bill." GOOG-1005, ¶55; GOOG-1003, ¶233.

FIGURE 7
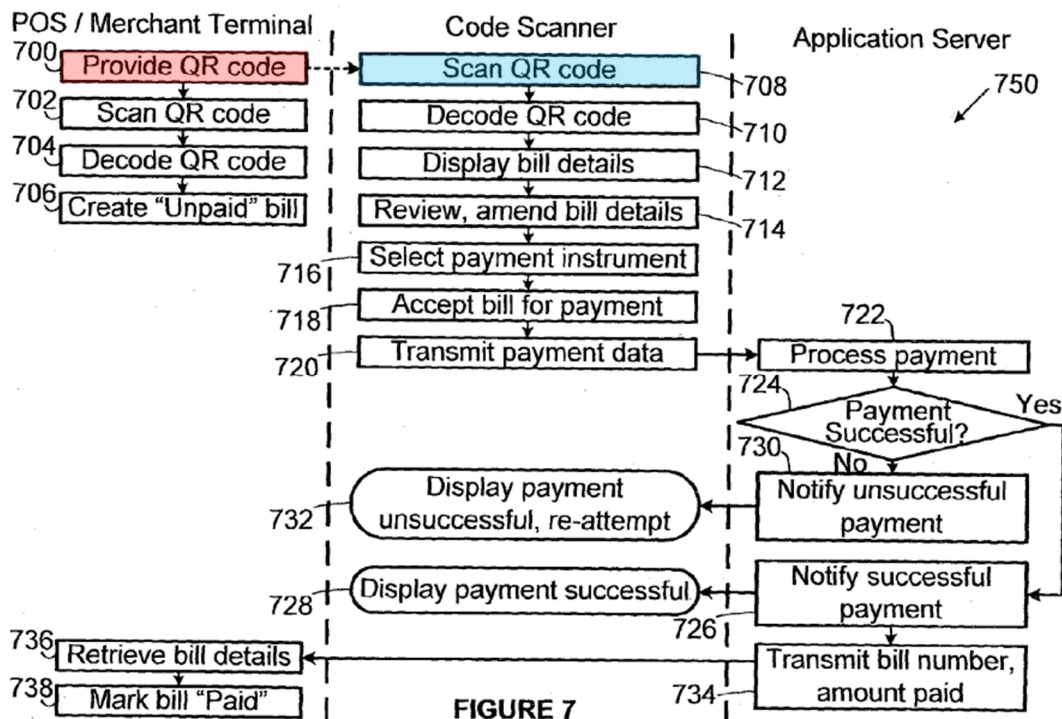
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶233

Thus, Moshal and Dessert render obvious [1.1.2]. GOOG-1003, ¶234.

[1.1.3] the data embedded in the tag includes an electronic invoice and settlement information with a merchant associated with the POS device;

Moshal and Dessert render obvious [1.1.3]. Moshal discloses that the data embedded in the modified tag (*see* Section XI.A.4.c) includes encoded data of "the merchant identification code, the bill identification number and the bill details." GOOG-1005, ¶¶54-55. The merchant identification code is uniquely assigned to the merchant terminal. GOOG-1005, ¶45; GOOG-1003, ¶¶235-236.

Thus, Moshal and Dessert render obvious [1.1.3] because Moshal teaches that the data embedded in the modified tag includes (1) an electronic invoice ("bill identification number and the bill details") and (2) settlement information with a merchant (unique merchant identification code) associated with the POS device. GOOG-1003, ¶237.

[1.2.1] extracting the electronic invoice from the captured data in the mobile device;

Moshal teaches [1.2.1] because the mobile device 106 extracts (decodes) the electronic invoice from the captured data in the tag. GOOG-1003, ¶238.

With reference to Figure 7 below, Moshal discloses that "[a]t block 710, the scanner app 164 decodes the scanned payment QR code to recover the encoded data that it contains namely, the merchant identification code, the bill identification number and the bill details." GOOG-1005, ¶55; GOOG-1003, ¶238.
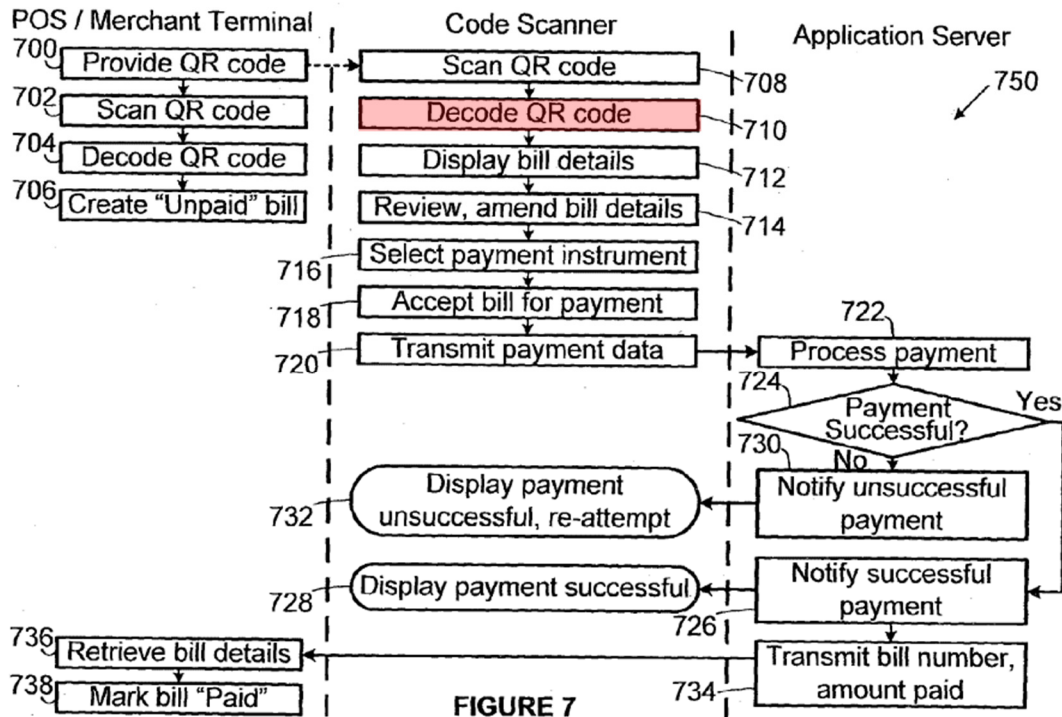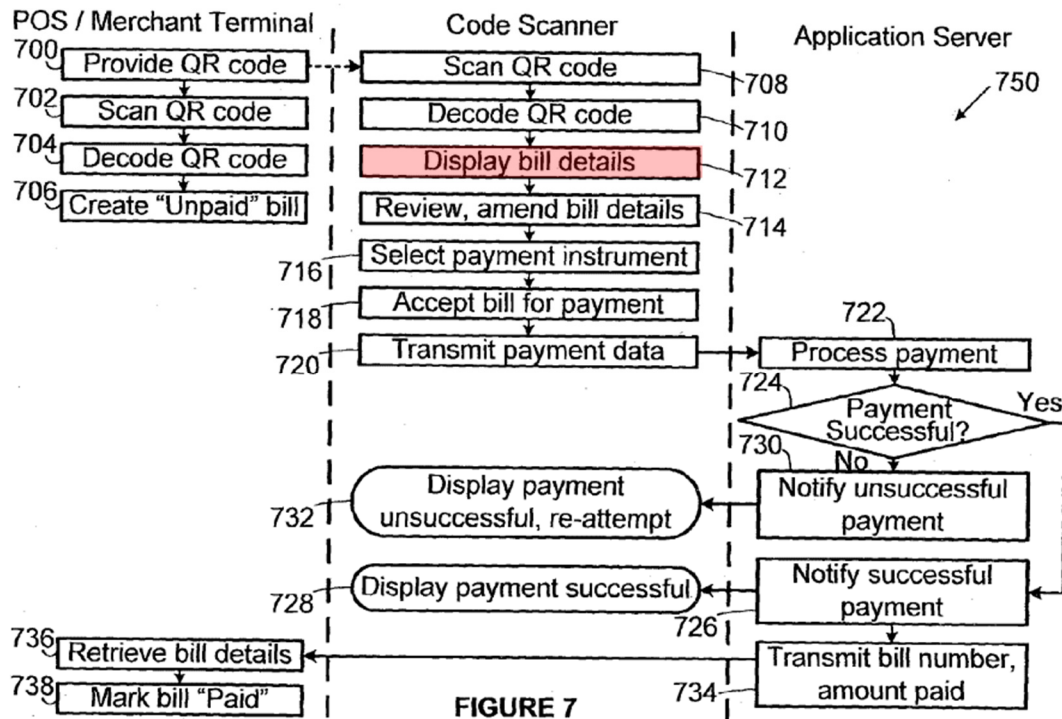

GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶238

Moshal thus teaches [1.2.1]. GOOG-1003, ¶239.

[1.2.2] displaying the electronic invoice on a display of the mobile device to show an amount to be paid by a user of the mobile device,
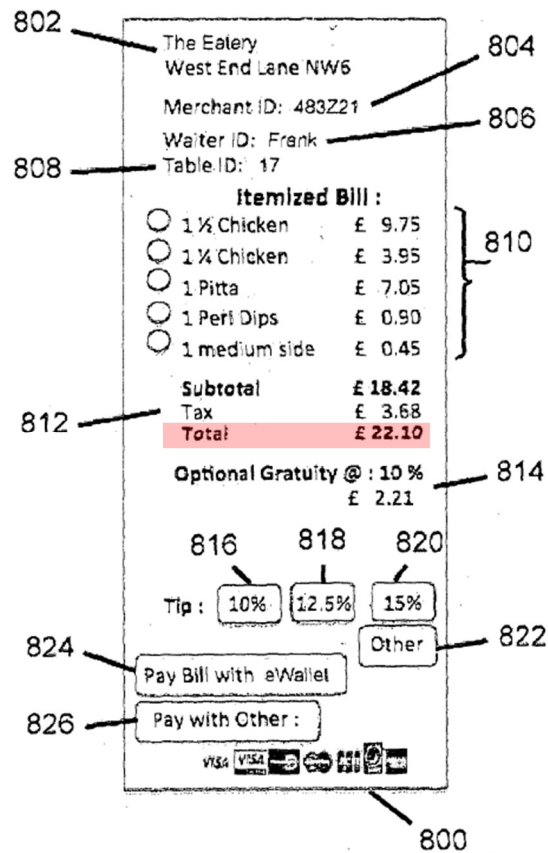
Moshal teaches [1.2.2] because the mobile device displays the electronic invoice, including all the details on the invoice (e.g., the amount to be paid), on a display of the mobile device. GOOG-1003, ¶240.

With reference to Figure 7 below, Moshal discloses that after the mobile device decodes the tag, "[a]t block 712, the scanner app 164 displays a page 800 on the user interface 154 with all the bill details." GOOG-1005, ¶55; GOOG-1003, ¶241.

GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶241

As shown in Figure 8 below, Moshal discloses that the displayed invoice 800 shows an amount to be paid (£22.10) by the user of the mobile device. GOOG-1005, ¶58; GOOG-1003, ¶242.
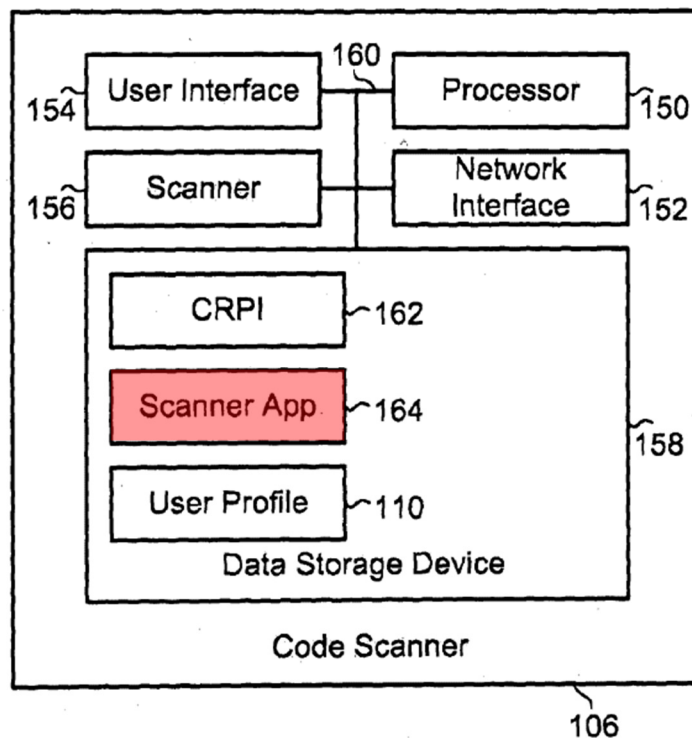

GOOG-1005, Fig. 8 (annotated); GOOG-1003, ¶242

Thus, Moshal teaches [1.2.2]. GOOG-1003, ¶243.

[1.2.3] wherein the mobile device is configured to execute an installed application therein to capture the data from the tag;

Moshal and Dessert render obvious [1.2.3] because Moshal teaches that the mobile device executes an installed application (scanner app 164) (modified scanner) to capture the data from the modified tag. GOOG-1003, ¶244.

With reference to Figure 4 below, Moshal discloses that at step 708 of Figure 7, the mobile device user "can use the scanner app 164 and the scanner 156 to scan the payment QR code on the hardcopy of the bill…." GOOG-1005, ¶55. Moshal discloses that the scanner app 164 is installed on the mobile device. GOOG-1005, ¶48. As described above with respect to [1.2.1], the mobile device uses the scanner app to extract (decode) the data encoded in the tag. GOOG-1005, ¶55. GOOG-1003, ¶245.
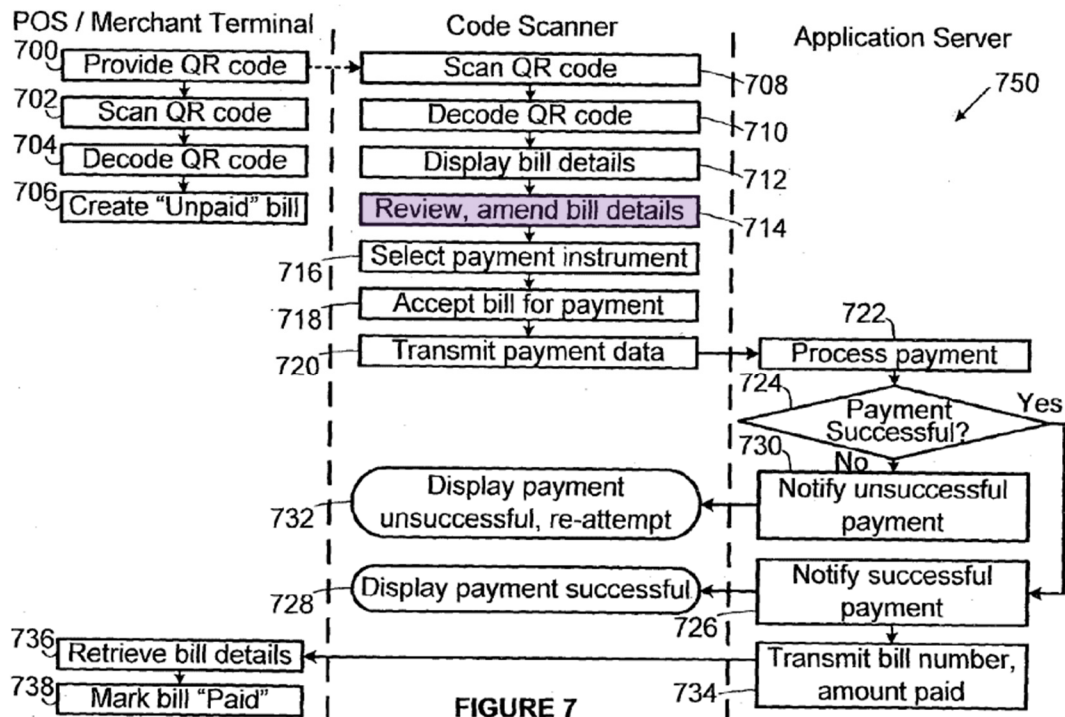
GOOG-1005, Fig. 4 (annotated); GOOG-1003, ¶245

Thus, Moshal and Dessert render obvious [1.2.3]. GOOG-1003, ¶246.

> **[1.3] receiving an entry by the mobile device, the entry including the amount for the invoice and optionally an additional amount from the user;**

Moshal teaches [1.3], because Moshal discloses that its "user interface" receives "data pertaining to the amount due on the bill," including "data adding a tip to the bill." GOOG-1005, ¶¶175-180; GOOG-1003, ¶247.

With reference to Figure 7 below, Moshal teaches that after the mobile device displays the invoice 800, including all the bill details, the scanner app

allows the user to review the details of the bill, amend the details as appropriate, and add an optional tip (step 714). GOOG-1005, ¶55. GOOG-1003, ¶248.

GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶248

With reference to Figure 8 below, the invoice 800 displayed on the mobile device includes several options for the user to add an optional tip. GOOG-1005, ¶58 (displayed invoice 800 includes icons 816, 818, 820 and 822 for the user to add an optional tip). In Figure 8 below, the "Total" amount (£22.10) is the original invoice amount (i.e., before tip is added). GOOG-1003, ¶249.
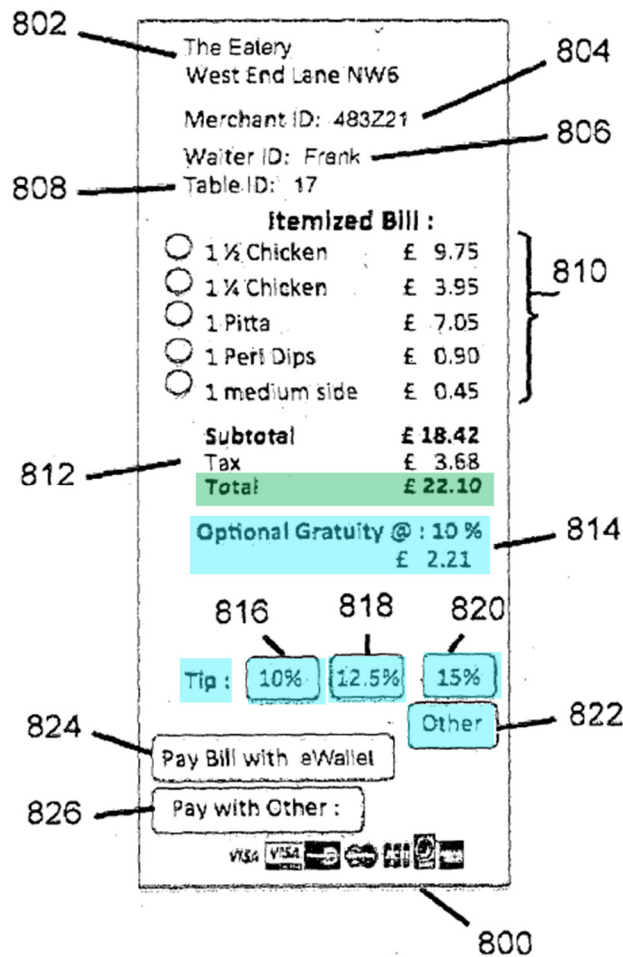
GOOG-1005, Fig. 8 (annotated); GOOG-1003, ¶249

As explained by clauses 36-38 below, Moshal teaches that the mobile device receives an entry including (1) the amount for the invoice and (2) optionally an additional amount from the user (combination of (1) and (2) is contained in clause 38).

"Clause 36—The code scanner of clause 35,

wherein the user interface [of the mobile device] is configured to <u>receive the data pertaining to the amount due on the bill</u>.

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Clause 37—The code scanner of any of clauses 35 through 36,

wherein the **user interface is configured to receive data modifying an amount due on the bill**.

Clause 38—The code scanner of any of clauses 35 through 37,

wherein **the user interface <u>is configured to receive data adding a tip to the bill</u>.**"

GOOG-1005, ¶¶175-180; GOOG-1003, ¶250. Thus, Moshal teaches [1.3].

GOOG-1003, ¶251.

[1.4] calculating a total amount by adding the additional amount to the amount in the electronic invoice;

Moshal teaches [1.4] by disclosing that a total amount is calculated by

adding an additional amount (e.g., tip) to the original invoice amount. GOOG-

1003, ¶252.

As described above with respect to [1.3], the user may add an optional tip at

step 714 and amend the displayed data. GOOG-1005, ¶55. With reference to

Figure 8 below, Moshal discloses that the "**service charge 814 [] is automatically**

added to the amount due," and the user also is provided "with an option to **add a**

service charge to the amount due on the bill if not already included in the bill

total." GOOG-1005, ¶58; GOOG-1003, ¶ 253.
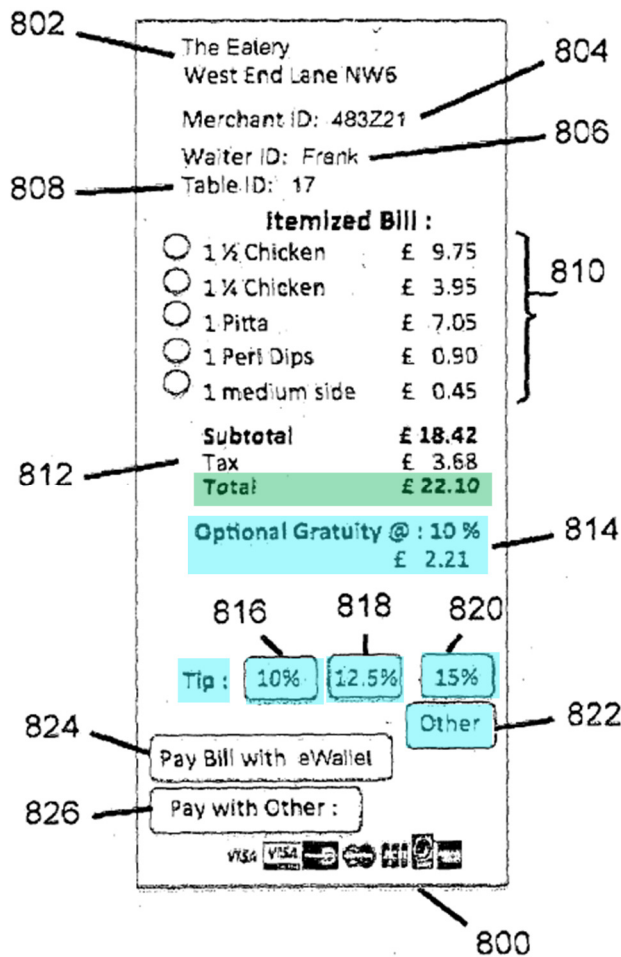
GOOG-1005, Fig. 8; GOOG-1003, ¶253

With reference to Figure 7 below, Moshal discloses that after the user has

added a tip (step 714), selected a payment instrument (716), and accepted the bill

for payment (including the added tip amount) (step 718), the mobile device then

transmits payment data including the total amount to be paid (step 720) to the

payment gateway. GOOG-1005, ¶55 ("**The scanner app then transmits to the**

application server 102, at block 720, … the amount due and the details of a

payment instrument to be used for payment…"). By transmitting the "the amount due," the mobile device transmits the **total amount** for the transaction, including the original invoice amount ("Total" in Fig. 8) plus the added gratuity (gratuity 814 or other gratuity amounts entered with icons 816, 818, 820 or 822 in Fig. 8). GOOG-1003, ¶254.

Thus, Moshal teaches calculating a total amount by adding the additional amount to the amount in the electronic invoice. GOOG-1003, ¶255.

To the extent that Moshal does not explicitly disclose that the total amount is calculated by adding the additional amount (tip) to the original amount in the electronic invoice, this feature was well known, as disclosed by Dessert. With reference to Figure 10C below, Dessert discloses that screen 202J displayed on the user's mobile device includes (i) the total amount ($63.92) to be paid, which includes (ii) a 20% tip amount ($10.65). As shown in Figure 10D, the original invoice amount ("Subtotal") was $53.25, and a 20% tip of $53.25 amounts to $10.65, as shown in Figures 10C and 10D. Thus, Figures 10C and 10D show that the total amount was calculated by adding the additional amount (20% tip of $10.65) to the amount in the electronic invoice ($53.25). GOOG-1007, 39:29-54 ("…The electronic receipt 220B may list…the tip for service selected, **a total bill**

amount, and the payment method which was selected for the transaction.");

GOOG-1003, ¶256.

FIG. 10C   **FIG. 10D**
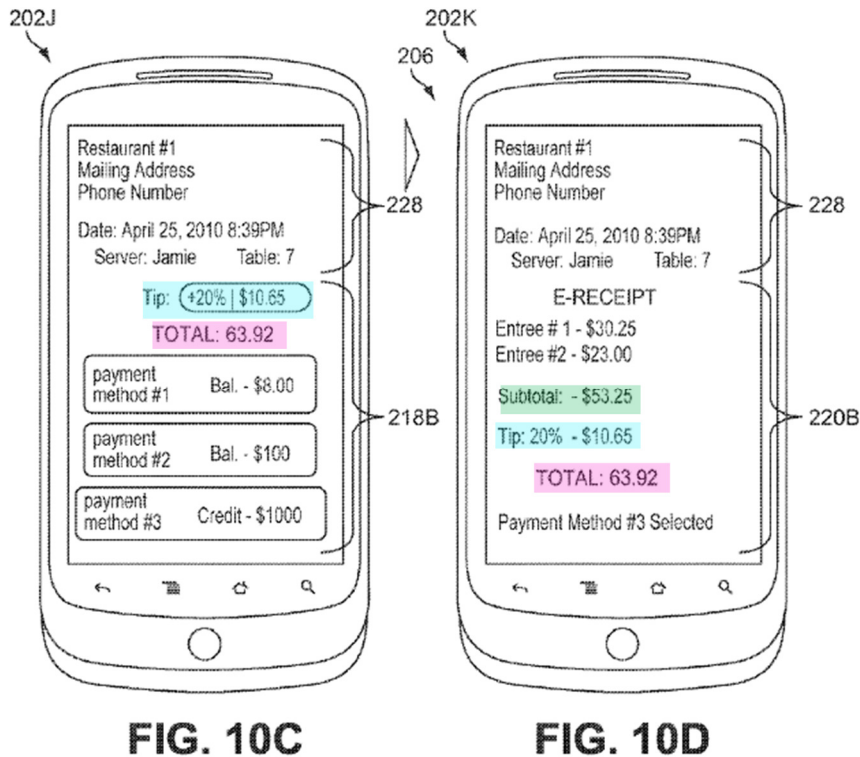
GOOG-1007, Figs. 10C and 10D (annotated); GOOG-1003, ¶256

A POSITA would have been motivated to modify Moshal to, as taught by

Dessert, provide confirmation to the mobile device user that the total amount to be

paid reflects the original invoice amount plus the added gratuity. GOOG-1003,

¶257.

Thus, Moshal teaches [1.4]. Additionally, Moshal in view of Dessert

renders obvious [1.4]. GOOG-1003, ¶258.

[1.5] generating a payment request in the mobile device in response to the electronic invoice after the user has chosen an electronic purse (e-purse) maintained locally in the mobile device;

Moshal discloses an e-wallet (e-purse as claimed in the '046 Patent) that is maintained locally in a mobile device and used to conduct transactions. As shown in Figure 8 below, an e-wallet is one of the payment options (icon 824 in Fig. 8) that a user may select to conduct a transaction. Moshal teaches the following sequence of operations: (1) a user sets up local payment options (including an e-wallet) on the mobile device when creating a user profile, (2) the user may select an e-wallet as a payment option (icon 824 in Fig. 8), and (3) after selecting a payment option, the mobile device generates and submits a payment request to the payment gateway. GOOG-1003, ¶ 259.

(1) User sets up local payment options (including e-wallet) on mobile device

First, Moshal discloses that when the user of mobile device installs the scanner app and creates a user profile 110 (Fig. 1), the user specifies various payment options for use in the scanner app, including credit cards, debit cards, and **e-wallets**. GOOG-1005, ¶42 (user profile 110 includes "**particulars of one or more payment instruments such as credit cards, debit cards, e-wallets and the like**."); GOOG-1003, ¶260.
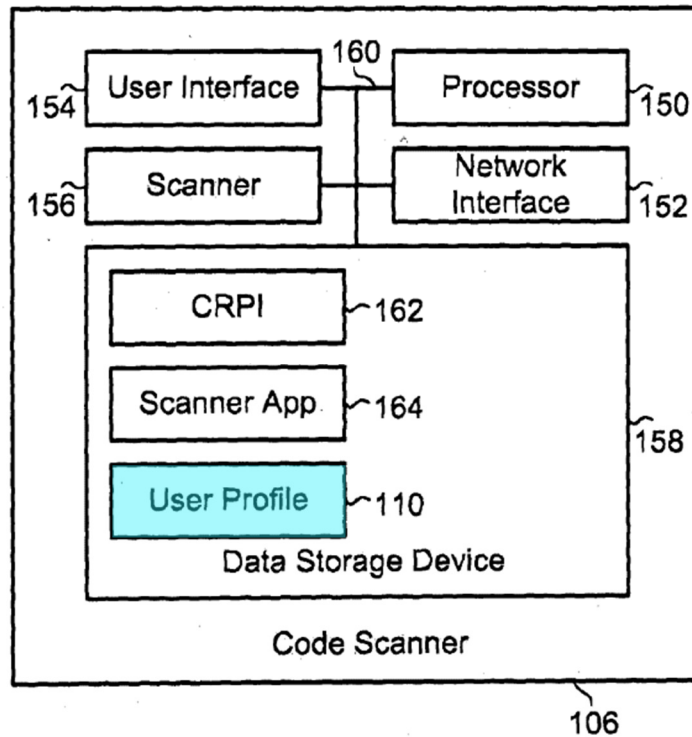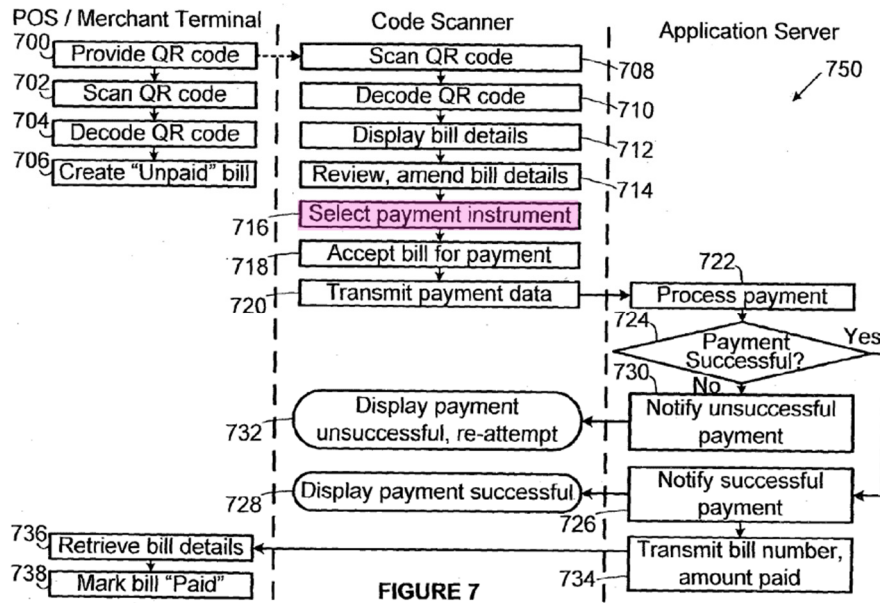
GOOG-1005, Fig. 4 (annotated); GOOG-1003, ¶260

**(2) User selects e-wallet as a payment option (icon 824 in Fig. 8)**

With reference to Figure 7 below, Moshal discloses that after the user

reviews the bill and makes any adjustments (e.g., adding tip) (step 714), the user

selects one of the available payment options (i.e., in user profile 110) (step 716).

GOOG-1005, ¶55; GOOG-1003, ¶ 261.
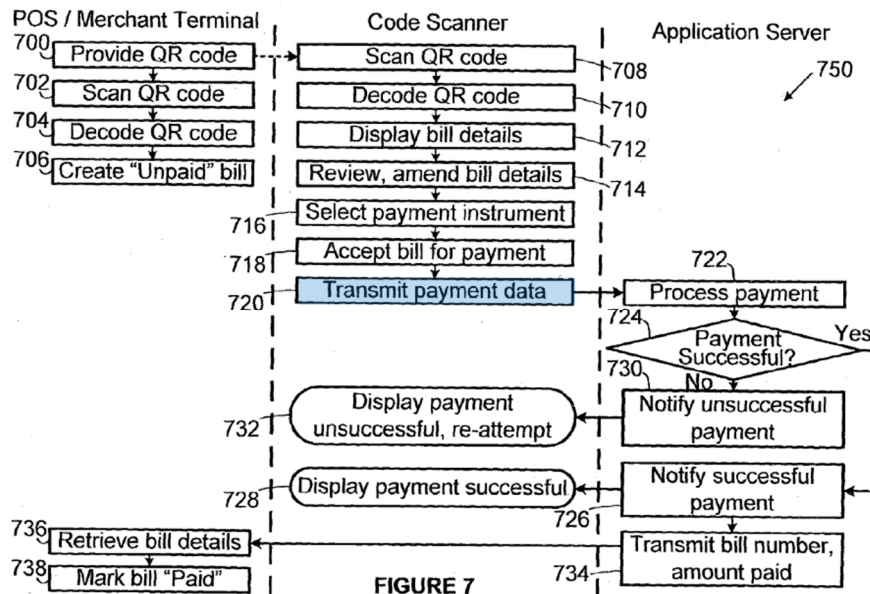
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶261

Moshal teaches that an e-wallet is a different payment option from credit cards or debit cards. GOOG-1005, ¶42 (the user adds "**payment instruments such as credit cards, debit cards, e-wallets and the like**."). This is shown in Fig. 8 below, where "[i]con **824 can be used to select an e-wallet with which to pay**, while icon 826 can be used to select a debit card or a credit card with which to pay." GOOG-1005, ¶59; GOOG-1003, ¶¶262-263.
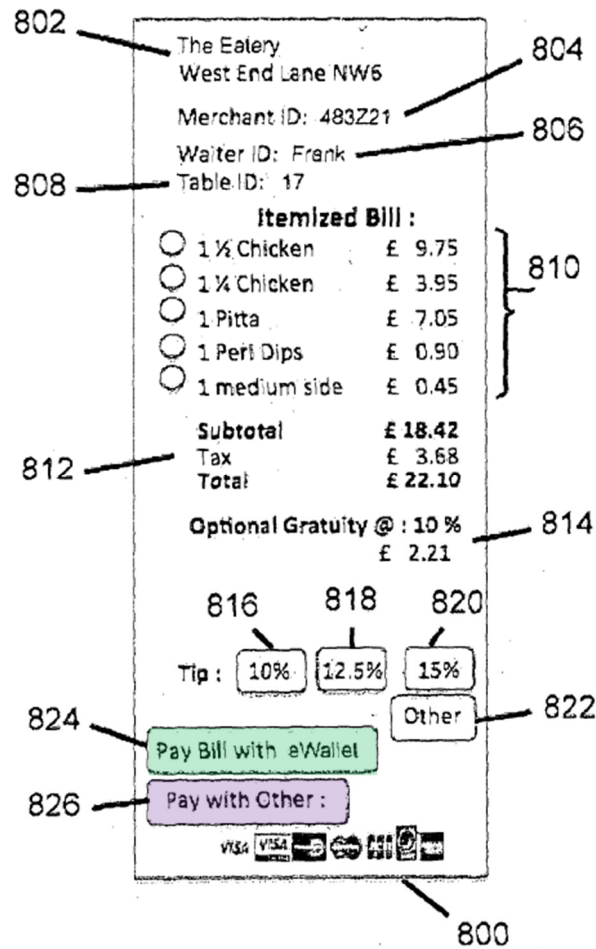
GOOG-1005, Fig. 8 (annotated); GOOG-1003, ¶263

(3) Generating and Sending Payment Request

With reference to Fig. 7 below, Moshal discloses that after the user has selected the payment option (e.g., e-wallet icon 824) in step 720, the mobile device generates and transmits a payment request (payment data) to the payment gateway. GOOG-1005, ¶55; GOOG-1003, ¶264.

GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶264

Moshal thus discloses that (i) a payment request is generated for transmission to the payment gateway, (ii) the payment request is generated in response to the invoice when the e-wallet is chosen by the user, and (iii) the e-wallet is maintained locally on the user's mobile device. GOOG-1003, ¶265.

[1.6] displaying the electronic invoice on the display of the mobile device for the user to verify the payment request

Moshal teaches [1.6] because Moshal discloses that the mobile device displays the invoice, and the user verifies the payment request before transmitting it to the payment gateway. GOOG-1003, ¶266.

With reference to Figure 8 below, Moshal discloses that the mobile device displays the invoice 800 (step 712 in Fig. 7), and the invoice 800 includes "all the bill details" for the user to verify. GOOG-1005, ¶55; GOOG-1003, ¶267.
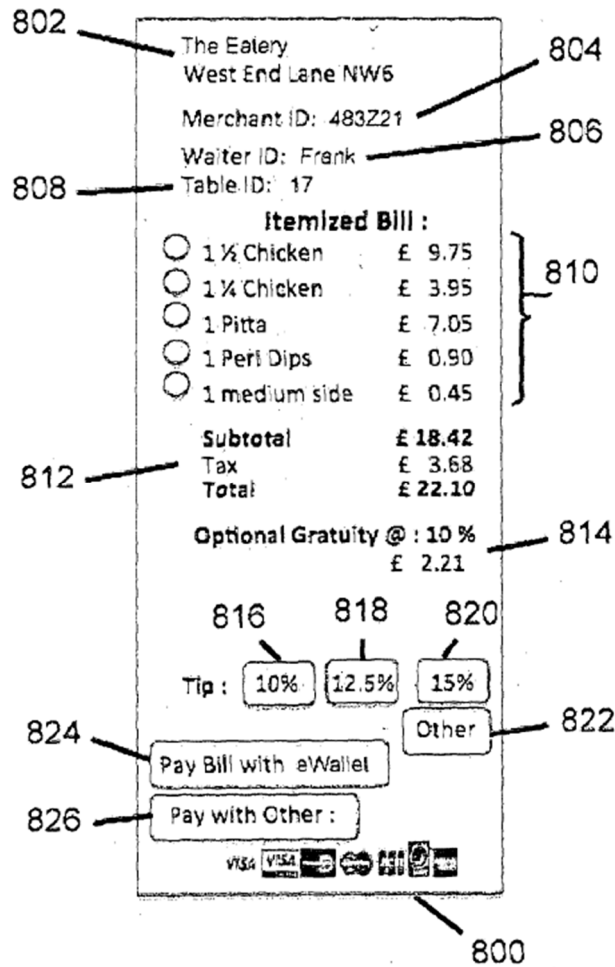
GOOG-1005, Fig. 8

With reference to Figure 7 below, Moshal discloses that while the invoice 800 is displayed, "the user can review the bill details displayed on page 800 and amend the displayed data, if necessary" (e.g., adding a tip) at step 714, and select a

payment instrument (e.g. selecting e-wallet using icon 824 in Fig. 8) in step 716.

GOOG-1005, ¶55. Then, before the user causes the mobile device to transmit a

payment request at 720, the user first verifies the payment request at step 718 by

accepting the bill for payment. GOOG-1005, ¶55 ("At block 718 the user can

accept the bill for payment."); GOOG-1003, ¶268.
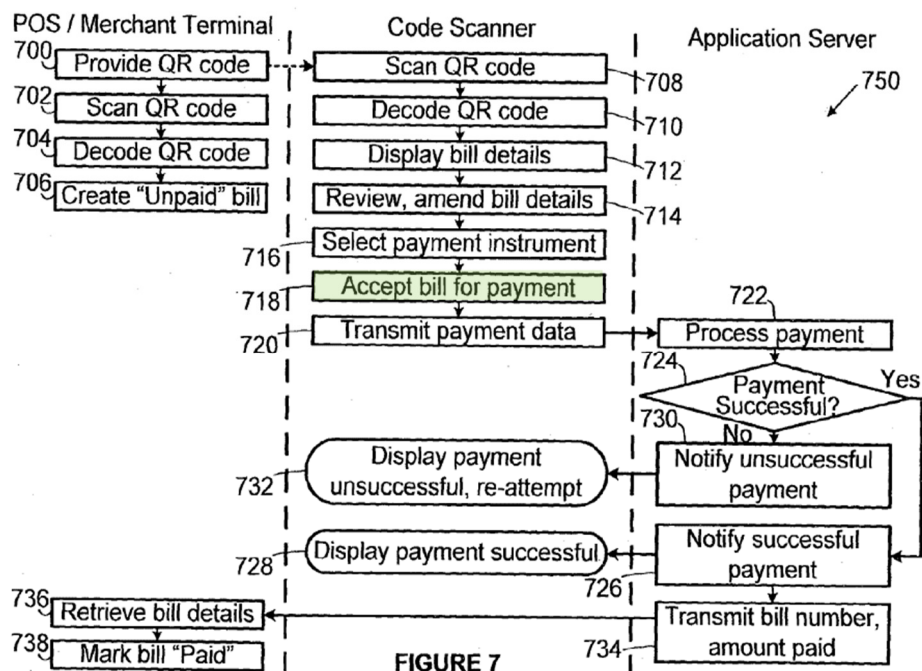
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶268

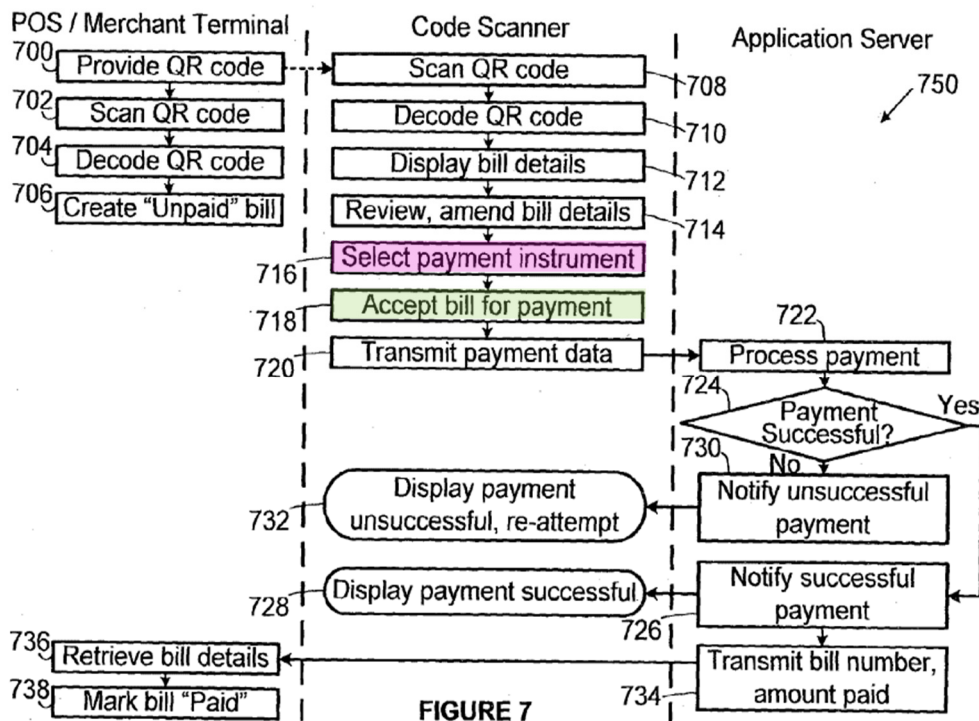Thus, Moshal teaches [1.6]. GOOG-1003, ¶269.

Limitations [1.2.2] and [1.6] do not require separate or distinct displaying

steps. The intended results recited in [1.2.2] ("to show an amount of to be paid by

a user of the mobile device") and [1.6] ("for the user to verify the payment

request") are accomplished while the invoice is displayed, as taught by Moshal for the reasons presented above with respect to [1.2.2] and [1.6]. The '046 Patent does not disclose separate, distinct displaying steps for performing the intended results recited in [1.2.2] and [1.6]. GOOG-1003, ¶270.

> **[1.7] verifying the total amount with a balance in the e-purse, wherein said verifying the total amount with a balance in the e-purse is performed within the mobile device without sending the payment request to a payment gateway;**

Limitation [1.7] is rendered obvious by Moshal and Jogu. GOOG-1003, ¶271.

Moshal teaches that after the selected gratuity "is automatically added to the amount due" (to arrive at a total amount) (¶58), the user selects an appropriate payment instrument (step 716) before the user accepts the bill for payment (step 718) in Figure 7 below. GOOG-1005, ¶55; GOOG-1003, ¶272.

POS / Merchant Terminal	Code Scanner	Application Server
700 Provide QR code	Scan QR code 708	750
702 Scan QR code	Decode QR code 710	
704 Decode QR code	Display bill details 712	
706 Create "Unpaid" bill	Review, amend bill details 714	
716	Select payment instrument	
718	Accept bill for payment	722
720	Transmit payment data	Process payment
		724 Payment Successful? Yes / No
732	Display payment unsuccessful, re-attempt	730 Notify unsuccessful payment
728	Display payment successful	Notify successful payment 726
736 Retrieve bill details		Transmit bill number, amount paid
738 Mark bill "Paid"	FIGURE 7	734

GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶272

One of the payment options the user may choose is an "e-wallet" ("Pay Bill with eWallet" icon 824 in Fig. 8). A POSITA would have been motivated to modify Moshal to verify whether the balance of the e-wallet is sufficient to cover the total amount (bill + gratuity) before the payment request is transmitted (step 720) to the payment gateway, as discussed above in Section XI.A.4.a. This was a common e-wallet technique, as described by Jogu. GOOG-1003, ¶273.

As shown in the excerpt of Figures 22 and 23, Jogu discloses that the mobile device determines whether the balance in the mobile device is sufficient for a transaction (step S718 in Fig. 22; screen D18 displayed on mobile device in Fig.

23); GOOG-1006, 14 ("the data processing unit 131 [of the mobile device]

determines whether or not the received payment amount is within the current
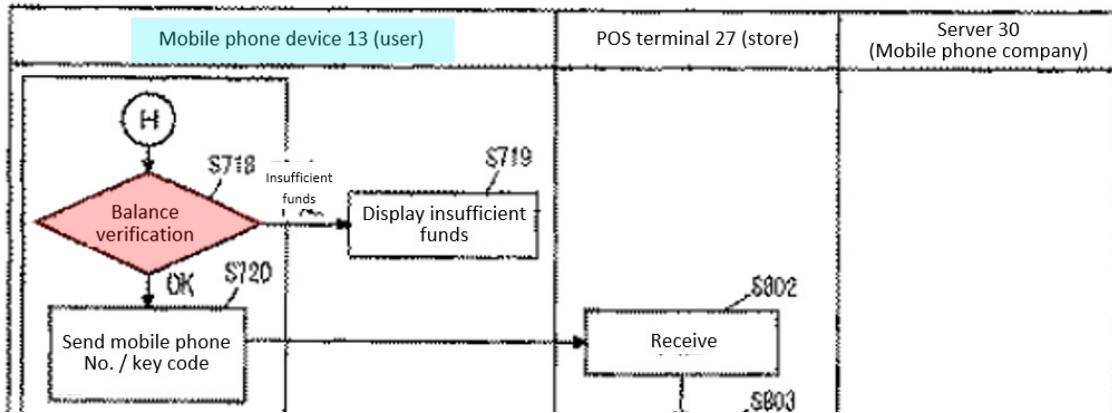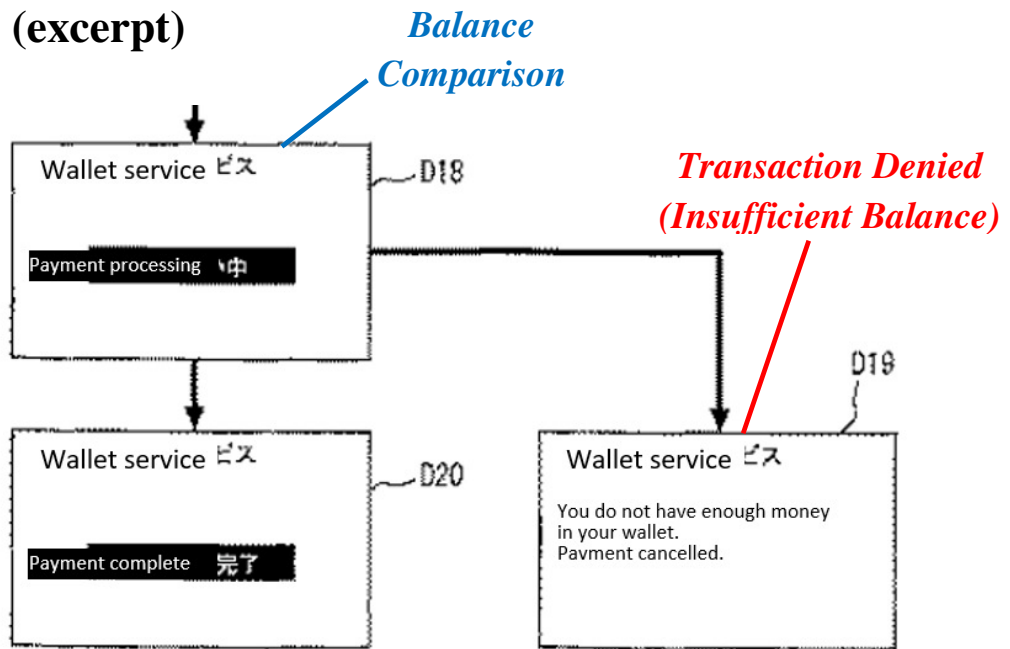
balance (S718)."); GOOG-1003, ¶274.

FIG. 22

Fig. 23 (excerpt)   *Balance Comparison*

Transaction Denied (Insufficient Balance)

GOOG-1006, Figs. 22 and 23 (annotated excerpts); GOOG-1003, ¶274.

Thus, Jogu discloses verifying the total amount with a balance in the e-purse, where the verification of the total amount with an e-purse balance is performed within the mobile device without sending the payment request to a payment gateway. GOOG-1006, 14; GOOG-1003, ¶¶275-276.

Therefore, Moshal and Jogu render obvious [1.7]. GOOG-1003, ¶¶275-276.

> **[1.8] displaying a denial of the payment request when the balance is less than the total amount;**

Limitation [1.8] is rendered obvious by Moshal and Jogu. GOOG-1003, ¶277.

As described above in Section XI.A.4.a, and with respect to limitations [1.5] and [1.7], a POSITA would have been motivated to modify Moshal to utilize an e-wallet with an updatable balance as an available payment option, based on the disclosure of Jogu, where the mobile device verifies whether there is a sufficient balance before proceeding with the transaction. GOOG-1006, 14, Fig. 22 (step S718); GOOG-1003, ¶278.

Jogu discloses that when the mobile device 13 determines there is an insufficient balance to conduct the transaction (step S718 in Fig. 22), the mobile device 13 displays a notification that there are insufficient funds to conduct the transaction (i.e., the transaction is denied) (step S719 in Fig. 22, screen D19 in Fig.

23), as shown in the excerpts of Figures 22 and 23 below. GOOG-1006, 14

("When the payment amount exceeds the balance, the data processing unit 131 [of

the mobile device] displays the screen D19 shown in FIG. 23 on the display device

137 and notifies the user 12 of the insufficient balance (S719)."). In the obvious

modification of Moshal, a denial of a payment request based on an insufficient

balance would be displayed on Moshal's mobile device, based on the teachings of
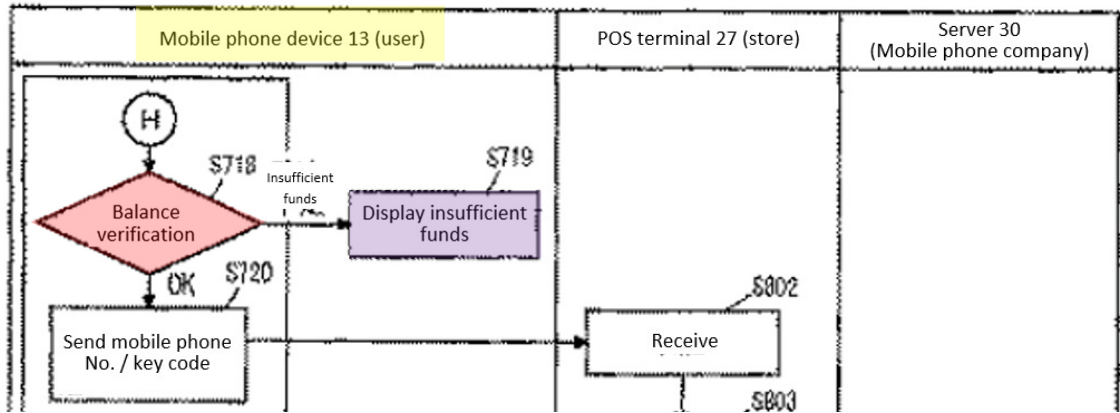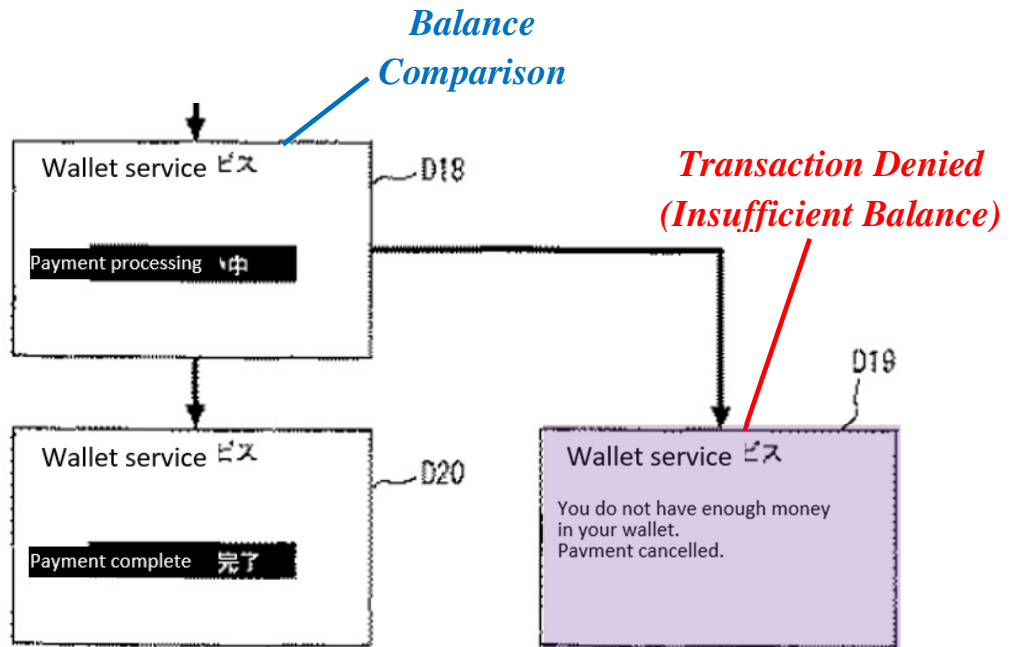
Jogu. GOOG-1003, ¶279.

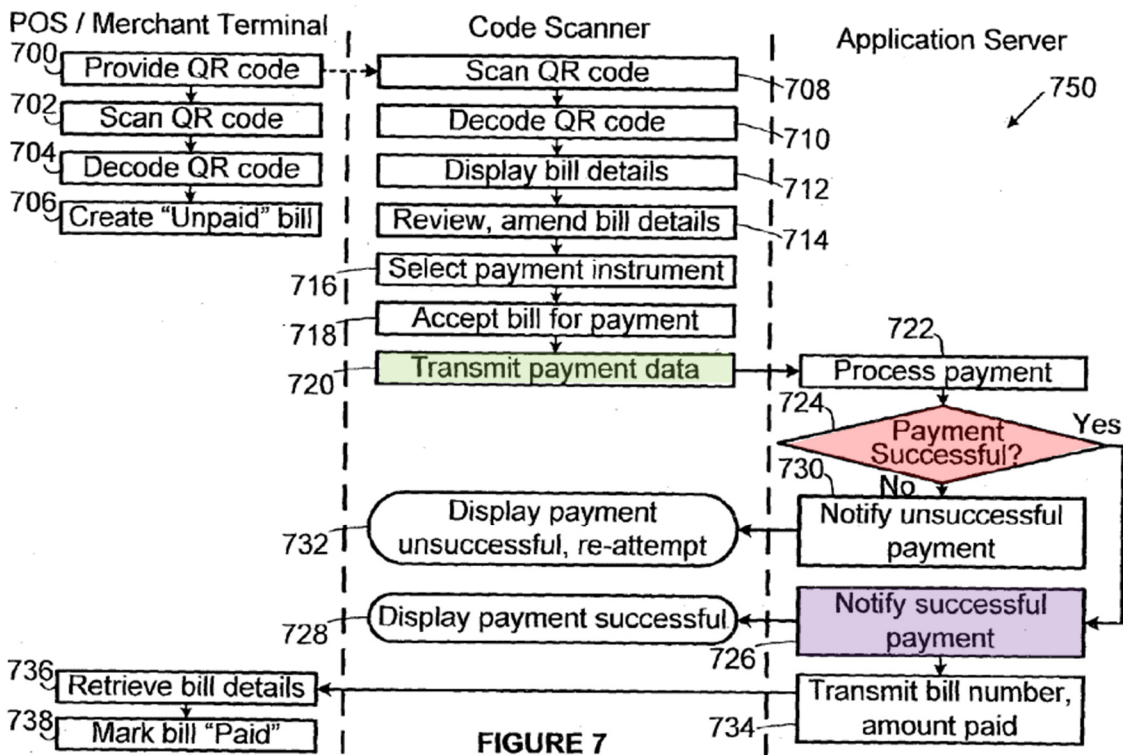FIG. 22

Fig. 23 (excerpt)

GOOG-1006, Figs. 22 and 23 (annotated excerpts); GOOG-1003, ¶279

[1.9] sending the payment request from the mobile device to the payment gateway, wherein the balance is sufficient to honor the payment request,

Limitation [1.9] is rendered obvious by Moshal in view of Jogu. GOOG-1003, ¶280.

With reference to Fig. 7 below, Moshal discloses that after the mobile device user has reviewed and verified the information on the displayed bill 800, the mobile device transmits a payment request (step 720 in Fig. 7) to the payment gateway 102. GOOG-1005, ¶55 (payment request includes "the amount due"). By transmitting "the amount due," Moshal teaches that the mobile device has sufficient funds to pay the bill. This is confirmed by Moshal's disclosure that the payment gateway determines whether the payment is successful (step 724), and sends a notification of successful payment to the mobile device (step 726) when the amount sent by the mobile device is sufficient to honor the payment request. GOOG-1005, ¶56; GOOG-1003, ¶281.

POS / Merchant Terminal
- 700 Provide QR code
- 702 Scan QR code
- 704 Decode QR code
- 706 Create "Unpaid" bill

Code Scanner
- Scan QR code — 708
- Decode QR code — 710
- Display bill details — 712
- Review, amend bill details — 714
- 716 Select payment instrument
- 718 Accept bill for payment
- 720 Transmit payment data

Application Server
- 750
- 722 Process payment
- 724 Payment Successful? — Yes
- 730 No — Notify unsuccessful payment
- 732 Display payment unsuccessful, re-attempt
- 728 Display payment successful
- 726 Notify successful payment
- 736 Retrieve bill details
- 738 Mark bill "Paid"
- 734 Transmit bill number, amount paid

FIGURE 7

GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶281

In the obvious modification of Moshal using Jogu's balance verification before a payment request is sent, Moshal's payment would be sent from the mobile device to the payment gateway (at step 720 in Fig. 7) after the mobile device verifies that the balance is sufficient to pay the bill (i.e., the amount is less than the balance of the e-purse maintained in the mobile device). As shown in the annotated excerpt of Figure 22 below, Jogu discloses that the mobile device transmits a payment request (S720) following positive verification in step S718 that the balance is sufficient. GOOG-1006, 14; GOOG-1003, ¶282.

– 94 –
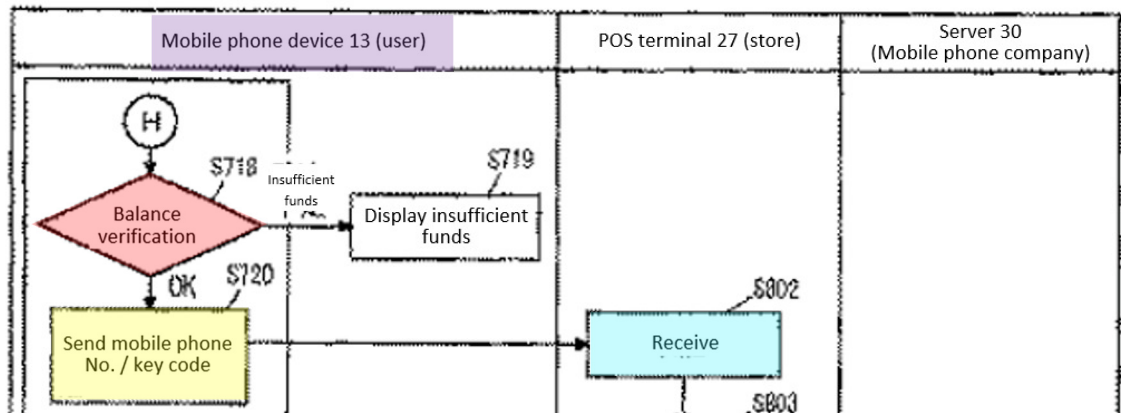
GOOG-1006, Fig. 22 (excerpt); GOOG-1003, ¶282

In the obvious modification of Moshal using Jogu's balance verification before a payment request is sent, Moshal's mobile device would send a payment request to the payment gateway (at step 720 in Fig. 7) after the mobile device has locally verified that the transaction amount does not exceed the balance in the mobile device (step S718 in Fig. 22 of Jogu). GOOG-1003, ¶283.

> **[1.10] the payment gateway sends a message directly to the POS device that a monetary transaction per the payment request sent from the mobile device has been successfully completed; and**

Limitation [1.10] is rendered obvious by Moshal and Jogu. GOOG-1003, ¶284.

With reference to Fig. 7 below, Moshal discloses that in step 734, the payment gateway sends a message (successful payment notification including "the bill identification number and the amount paid") directly to the POS/merchant terminal. GOOG-1005, ¶57; GOOG-1003, ¶285.
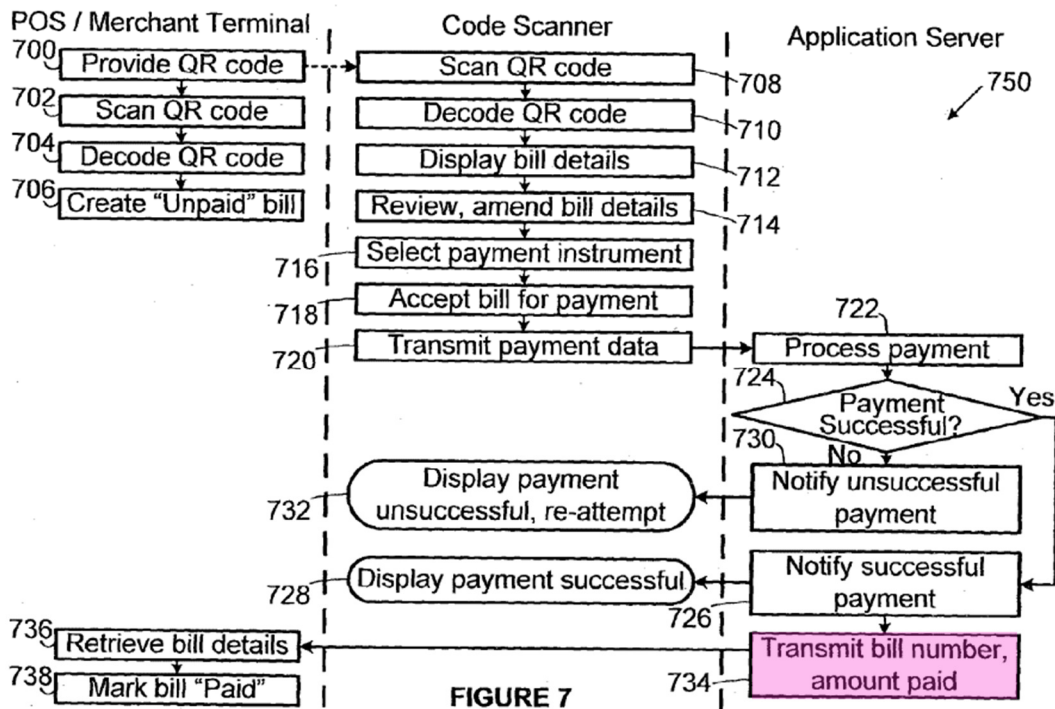
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶285

With reference to Fig. 6 below, Jogu discloses that the payment gateway 10 sends a payment confirmation message ("Settlement complete") directly to the POS terminal 27. GOOG-1006, 6 ("[T]he [payment gateway] 10…notifies the POS terminal 27 of the completion of the payment."); GOOG-1003, ¶286.
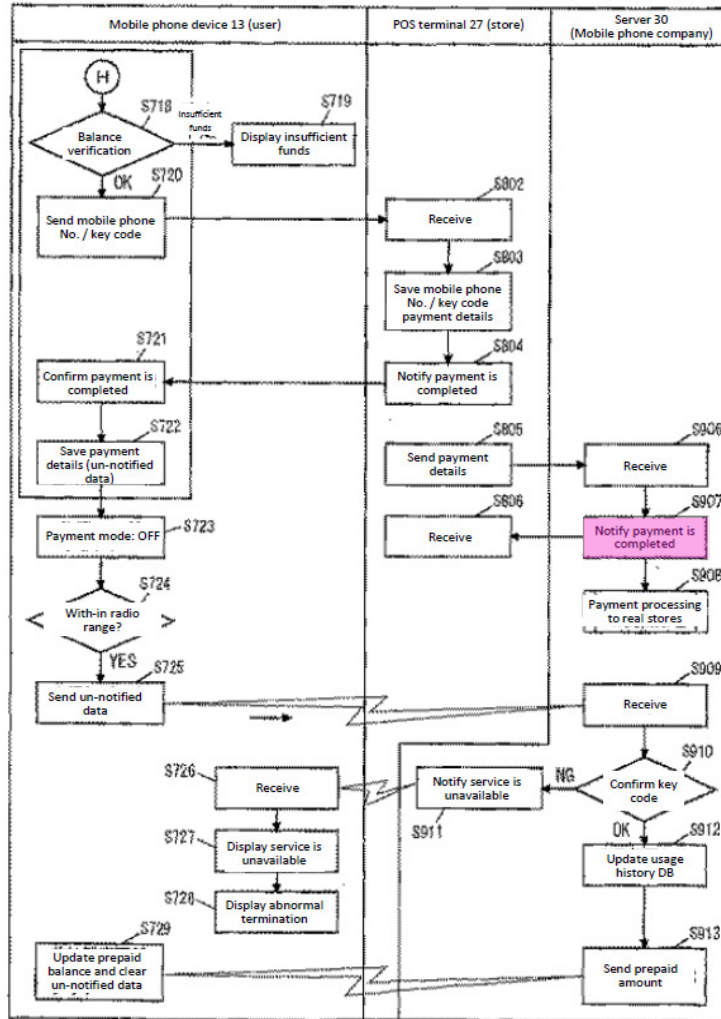
FIG. 6
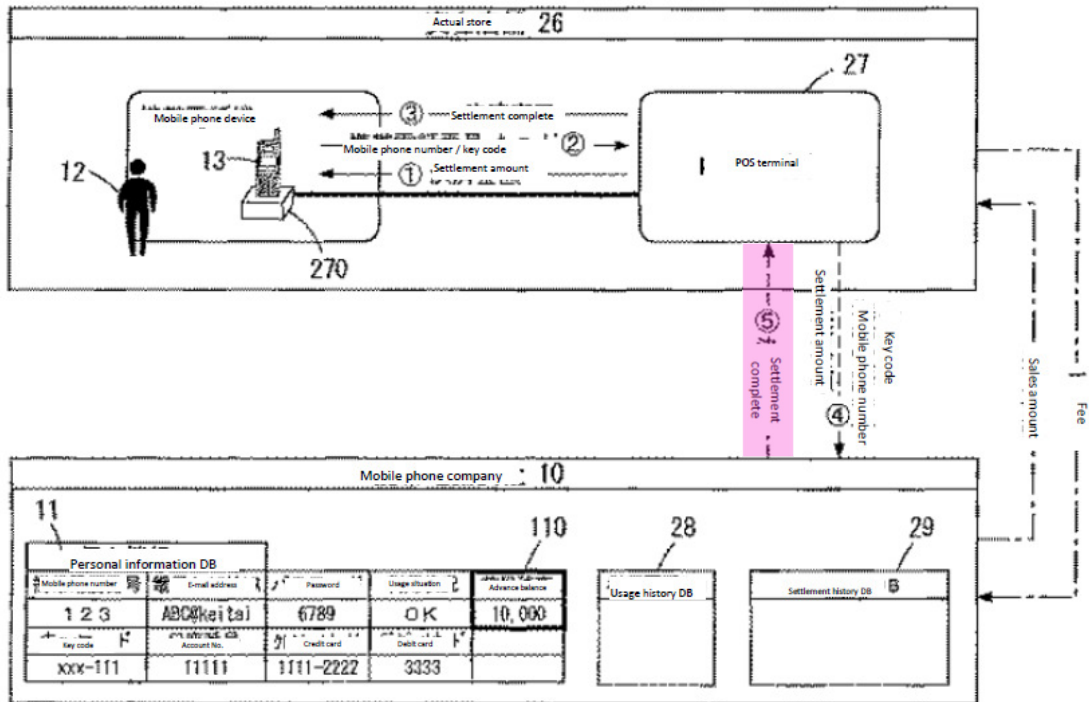
GOOG-1006, Fig. 6; GOOG-1003, ¶286

Below is an enlarged version of the pertinent portion of Fig. 6:
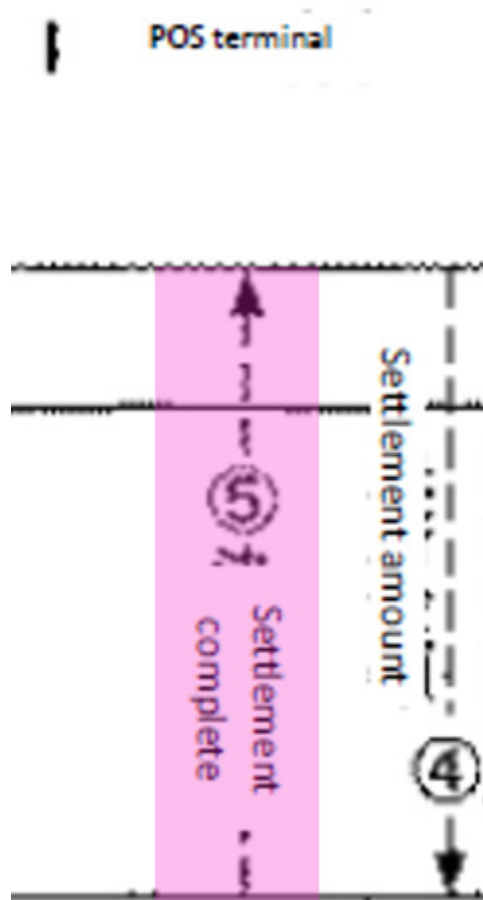
POS terminal

GOOG-1006, Fig. 6 (enlarged, annotated excerpt); GOOG-1003, ¶286
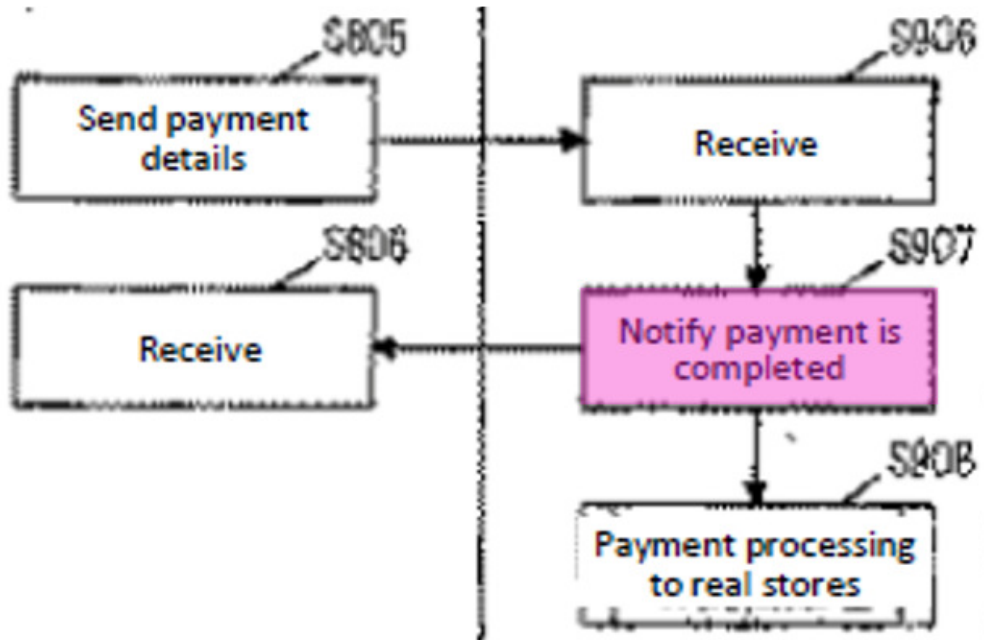
Similarly, with reference to Fig. 22 below, Jogu discloses that the payment gateway 10 "transmits the payment completion information to the POS terminal 27 (S907)." GOOG-1006, 15; GOOG-1003, ¶287.

FIG. 22

GOOG-1006, Fig. 22 (annotated); GOOG-1003, ¶287

Below is an enlarged version of the pertinent portion of Fig. 22:

GOOG-1006, Fig. 22 (enlarged, annotated excerpt)

Thus, it was known to transmit a successful payment notification from a

payment gateway directly to a POS device, as disclosed by Jogu. GOOG-1003,

¶¶288-291 (citing GOOG-1013, ¶28, Fig. 3, and GOOG-1011, Fig. 4A, ¶62, as

additional prior art examples and advantages of transmitting a successful payment

notification from a payment gateway to a POS device).

A POSITA would have been motivated to modify Moshal to send a message

from Moshal's payment gateway directly to the POS device 104 indicating that a

monetary transaction per the payment request sent from the mobile device has been

successfully completed. GOOG-1003, ¶292. This direct notification would

simplify and accelerate processing by the POS device 104, which provides the tag

including "a bill identification code or number, and all the details contained in the bill." GOOG-1005, ¶54. Moshal discloses that the payment gateway transmits the bill identification and the amount paid when transmitting the successful payment notification at step 734 in Fig. 7. GOOG-1005, ¶¶55, 57; GOOG-1003, ¶292.

While Fig. 1 of Moshal suggests that the POS terminal 104 and merchant terminal 108 are distributed devices, the use of "POS / Merchant Terminal" in Fig. 7 (annotated below) suggests to a POSITA that they can be integrated. GOOG-1003, ¶293. Moshal implicitly discloses that the POS terminal 104 and merchant terminal 108 are provided in the same location, explaining that "[a]t block 702 the waiter or merchant can use the merchant app 178 and the scanner 171 on the merchant terminal 108 to scan the payment QR code provided by the POS terminal 104." GOOG-1005, ¶54; GOOG-1003, ¶293.
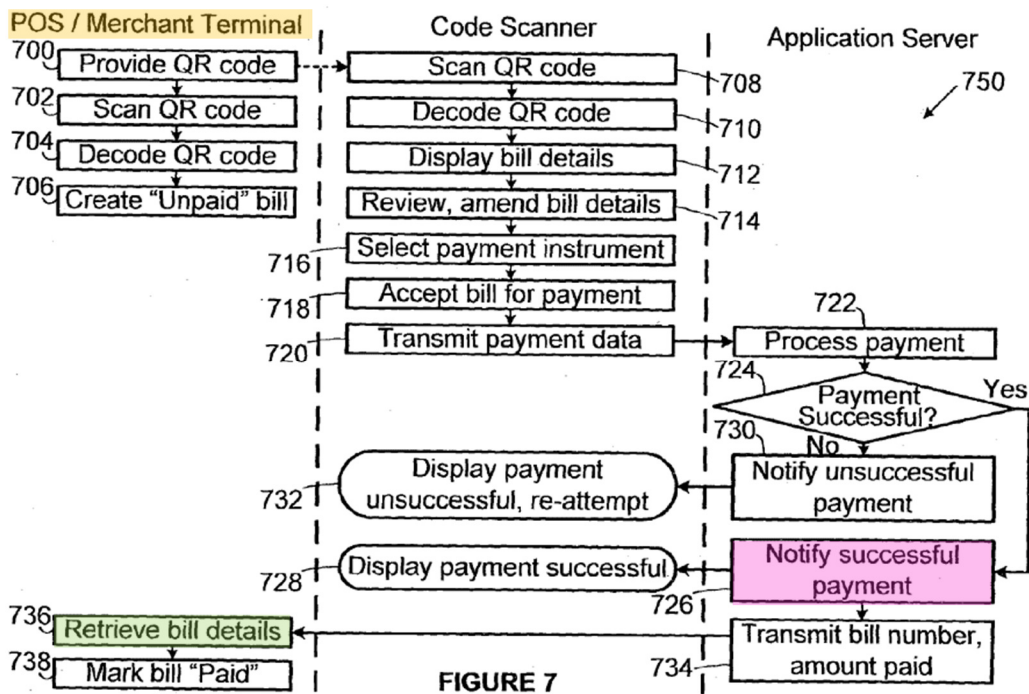
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶293

As described in Mr. Gray's declaration, it was well known in the art to make a POS terminal and a merchant terminal into one integrated component in a contactless payment system. GOOG-1003, ¶¶294-295 (citing GOOG-1012, Figs. 2-3, 4:7-12, 4:23-32, 5:35-40).
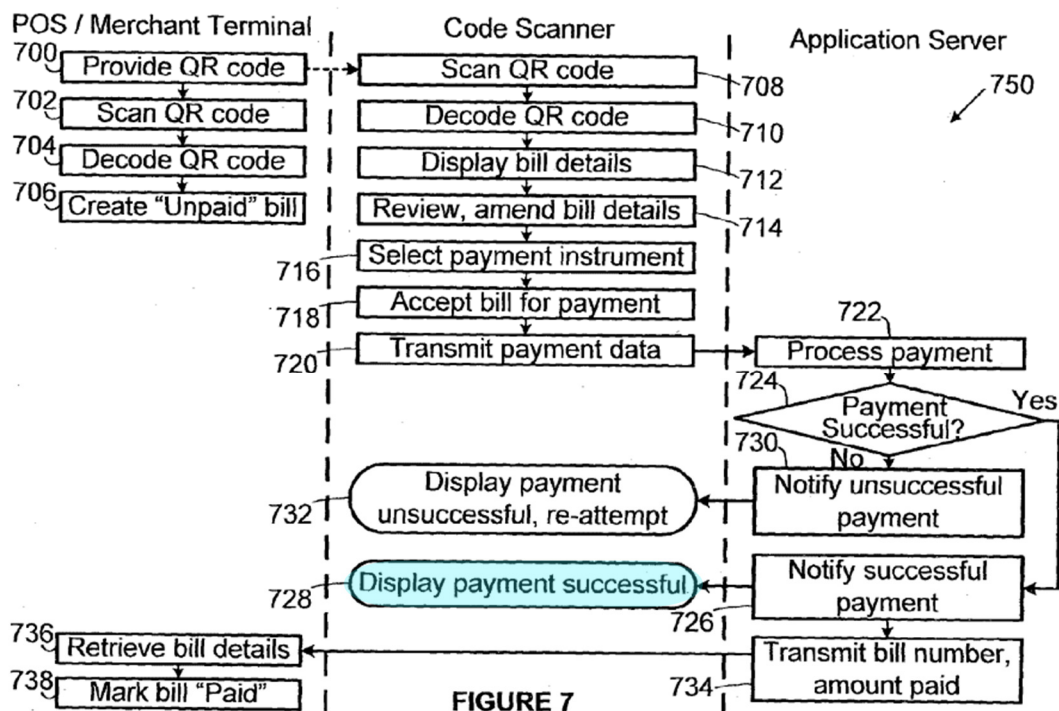
A POSITA would have been motivated to modify Moshal so that the payment gateway 102 sends a message directly to the POS device that a monetary transaction per the payment request sent from the mobile device has been successfully completed, because then the POS device is informed of a successful transaction, as disclosed by Jogu. GOOG-1003, ¶296. It was known that sending a

notification of a successful transaction directly from the payment gateway to the

POS device may reduce the risk of fraud. GOOG-1003, ¶296 (citing GOOG-1011,

¶62 ("Sending the result to the [POS terminal] 16b from the [payment] gateway 14,

rather than from the [mobile device] 16a, may reduce the risk of fraud.")).

> **[1.11] displaying a confirmation in the mobile device that the balance in the e-purse has been reduced by the total amount.**

Limitation [1.11] is rendered obvious by Moshal and Jogu. GOOG-1003,

¶297.

With reference to Fig. 7 below, Moshal discloses that the mobile device

displays confirmation of successful payment (step 728). GOOG-1005, ¶56;

GOOG-1003, ¶298.

POS / Merchant Terminal | Code Scanner | Application Server

700 Provide QR code → Scan QR code ←708
702 Scan QR code | Decode QR code ←710
704 Decode QR code | Display bill details ←712
706 Create "Unpaid" bill | Review, amend bill details ←714
716 Select payment instrument
718 Accept bill for payment | 722 Process payment
720 Transmit payment data → 724
730 Payment Successful? — Yes
No
732 Display payment unsuccessful, re-attempt ← Notify unsuccessful payment
728 Display payment successful ← Notify successful payment
726
736 Retrieve bill details ← 734 Transmit bill number, amount paid
738 Mark bill "Paid" | **FIGURE 7**

750

GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶298

When using the e-wallet payment option in Moshal, it would have been obvious as part of this successful payment display to also display the reduced balance in the e-wallet, as doing so was a conventional e-wallet technique. GOOG-1003, ¶299. Jogu teaches that when a transaction has been successfully conducted, the balance on the mobile phone is updated to reflect the completed transaction (S729 in Fig. 22). As shown in Figure 22 below, Jogu discloses that the payment gateway 10 sends the updated balance to the mobile device 13 (step S913), and the mobile device 13 updates the balance stored on the mobile device 13 (step S729). GOOG-1006, 14-15; GOOG-1003, ¶¶300-301.

FIG. 22
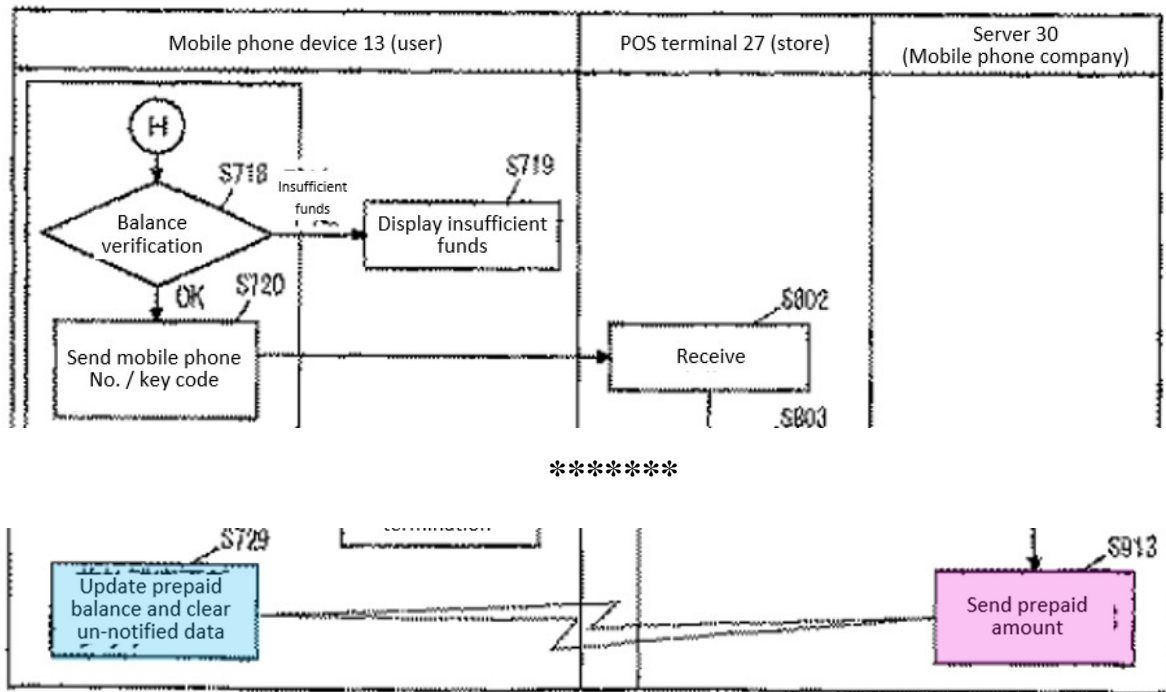
GOOG-1006, Fig. 22 (annotated excerpt); GOOG-1003, ¶300

Further, Jogu discloses that the updated balance is displayed on the mobile device as part of the confirmation that payment with the account balance was successful (S432 in Fig. 73). With reference to Fig. 73 below, Jogu discloses that the updated (reduced) balance is displayed as part of the confirmation that payment with the account balance was successful. GOOG-1006, 34 ("In mobile phone 13, the transmission / reception unit 135 receives the remittance completion notification sent from the payment institution 90 via the mobile phone company 10 (S431), and further, the data processing unit 131 **displays the remittance**
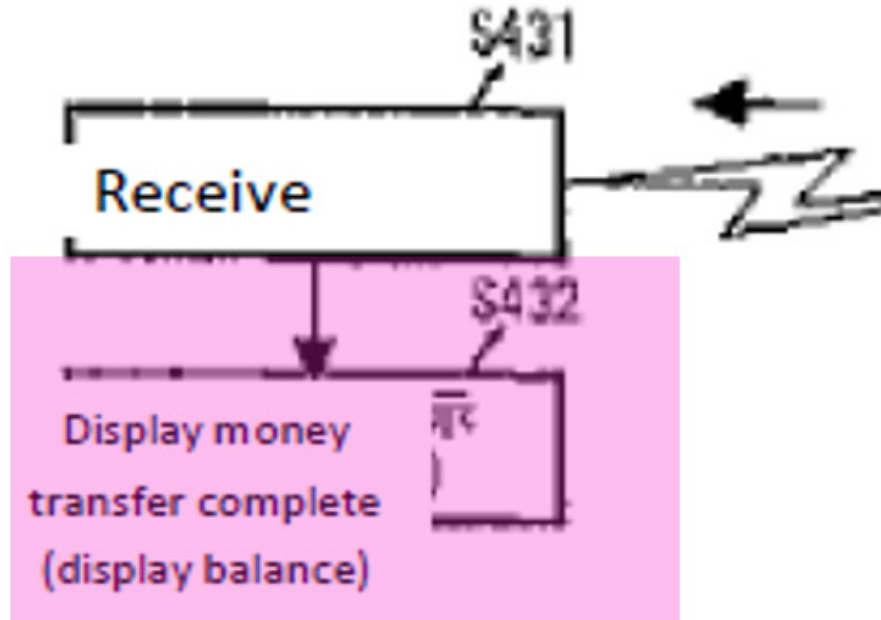
completion on the display device 137 together with the virtual account balance after the remittance (S432)."). GOOG-1003, ¶302.

FIG. 73
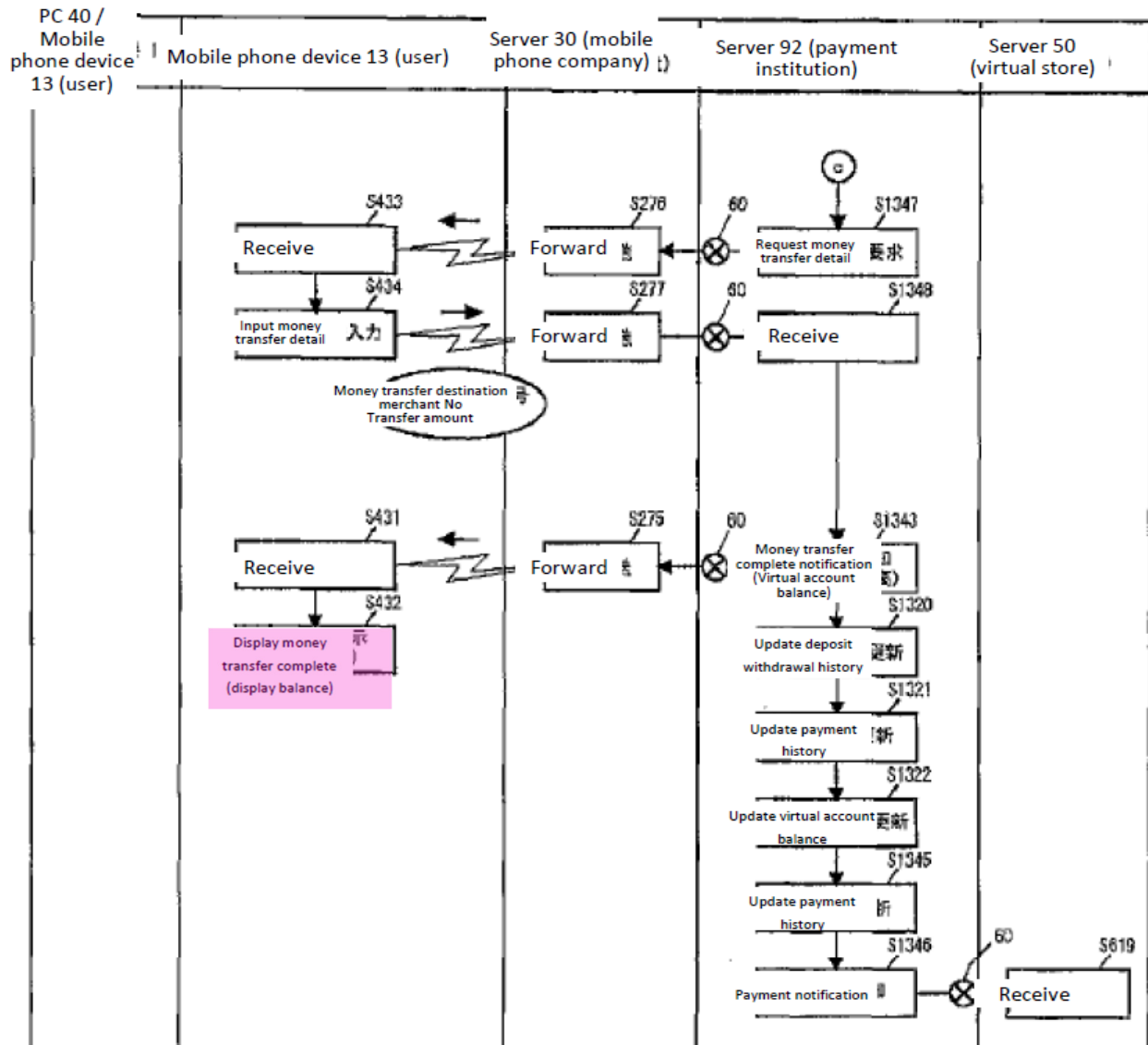
GOOG-1006, Fig. 73 (annotated); GOOG-1003, ¶302

Below is an enlarged version of the pertinent portion of Fig. 73:

GOOG-1006, Fig. 73 (enlarged, annotated excerpt); GOOG, 1003, ¶302

Thus, Jogu discloses that when using a balance in a mobile device's e-wallet, it was known that the payment gateway reduces the balance in response to a successful transaction, and the balance is updated (reduced) in the mobile phone (step S729 in Fig. 22, step S432 in Fig. 73). This updating is advantageous because the mobile device user would have contemporaneous confirmation that a transaction was successfully conducted and would know the current balance before deciding whether the e-purse has sufficient funds to use that balance for another transaction. A POSITA would have been motivated to modify Moshal to provide this confirmation of a reduction in the balance completion of a successful
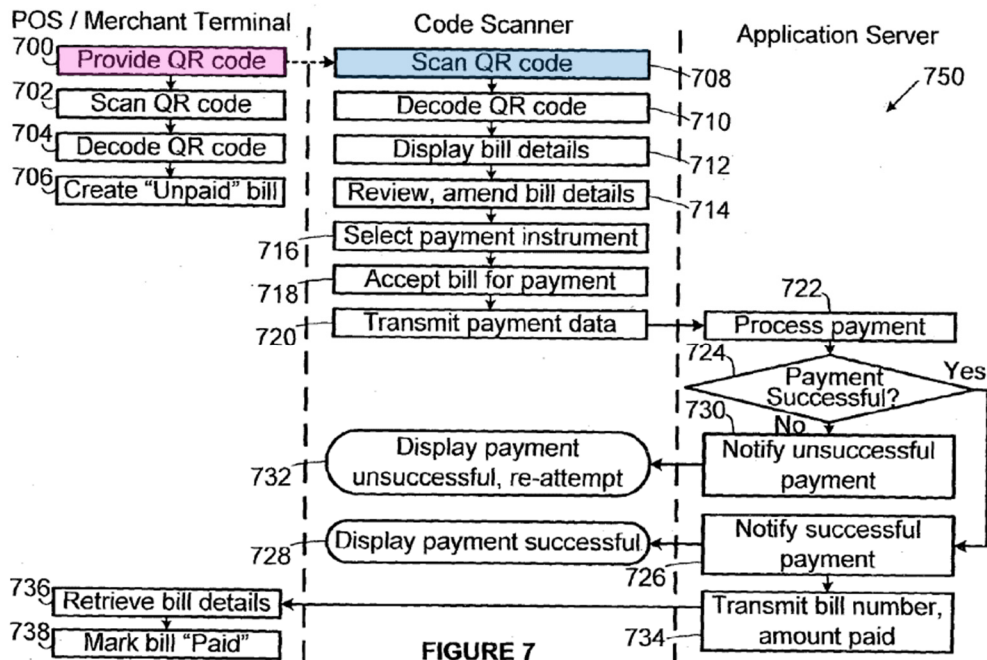
transaction for the reasons presented above in Section XI.A.4.b. GOOG-1003, ¶303.

Accordingly, claim 1 is obvious over Moshal, Jogu, and Dessert. GOOG-1003, ¶304.

b. *Claim 2*

[2.0] The method as recited in claim 1, wherein said causing a mobile device to capture data directly from a tag physically presented thereto includes placing the mobile device near the tag.

Moshal teaches [2.0]. With reference to Figure 7 below, Moshal discloses that the waiter presents the tag to the consumer with the restaurant bill (step 700), and the consumer uses the scanner app 164 and scanner 156 (Fig. 4) on the consumer's mobile device to scan the tag when the mobile device is near the tag (step 708). GOOG-1005, ¶¶54-55. Thus, Moshal discloses placing the mobile device near the modified tag (*see* Section XI.A.4.c) to scan it. GOOG-1003, ¶¶305-306.

```
POS / Merchant Terminal        Code Scanner              Application Server
700  Provide QR code          Scan QR code          708                    750
702  Scan QR code             Decode QR code        710
704  Decode QR code           Display bill details  712
706  Create "Unpaid" bill     Review, amend bill details  714
                         716  Select payment instrument
                         718  Accept bill for payment            722
                         720  Transmit payment data    →    Process payment
                                                       724
                                                       Payment        Yes
                                                   730 Successful?
                                                       No
                         732  Display payment          Notify unsuccessful
                              unsuccessful, re-attempt  payment
                         728  Display payment successful Notify successful
                                                   726   payment
736  Retrieve bill details ←                       734  Transmit bill number,
738  Mark bill "Paid"          FIGURE 7                  amount paid
```

GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶305

c.   *Claim 4*

[4.0] The method as recited in claim 1, wherein said displaying the electronic invoice on the display of the mobile device comprises:

As described above with respect to [1.6], Moshal discloses that the electronic invoice is displayed on the mobile device's display. GOOG-1005, ¶55, Figs. 7, 8 (step 712, displayed invoice 800); GOOG-1003, ¶315.

[4.1] allowing the user to verify the amount in the electronic invoice and make a change to the amount when needed; and

Moshal teaches [4.1]. With reference to Fig. 7 below, Moshal teaches that the user reviews (verifies) the amount in the displayed invoice 800 (step 712) and

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"[a]t block 714 of FIG. 7 **the user can review the bill details displayed on page 800 and amend the displayed data, if necessary.**" GOOG-1005, ¶55; GOOG-1003, ¶316.
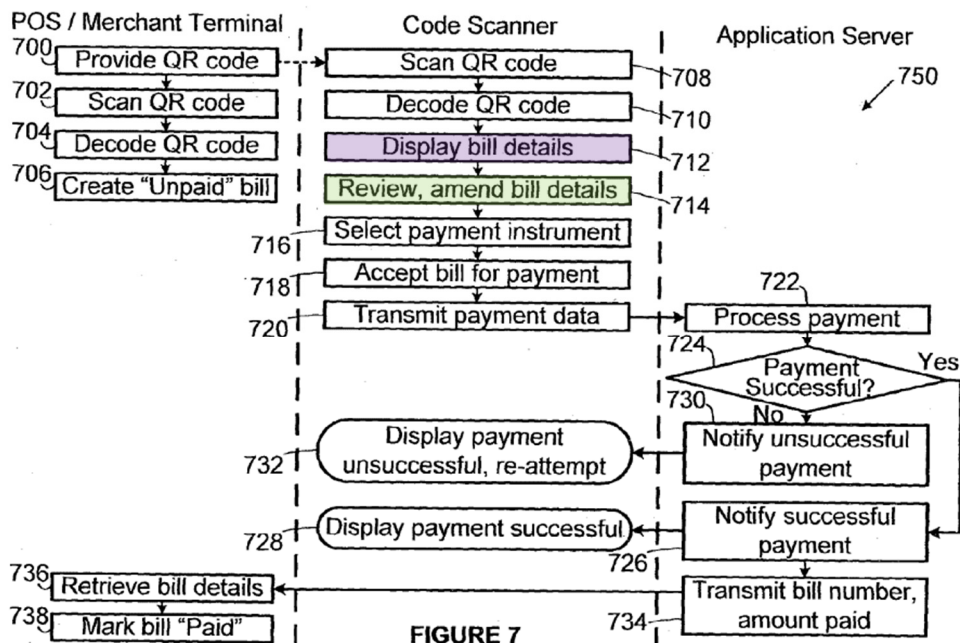
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶316

[4.2] paying the total amount with the e-purse.

Moshal teaches [4.2]. As shown in Fig. 8 below, the mobile device user may pay for the invoice with the e-wallet (e-purse as claimed in the '046 Patent) using icon 824 displayed on the mobile device. GOOG-1005, ¶58; GOOG-1003, ¶317.
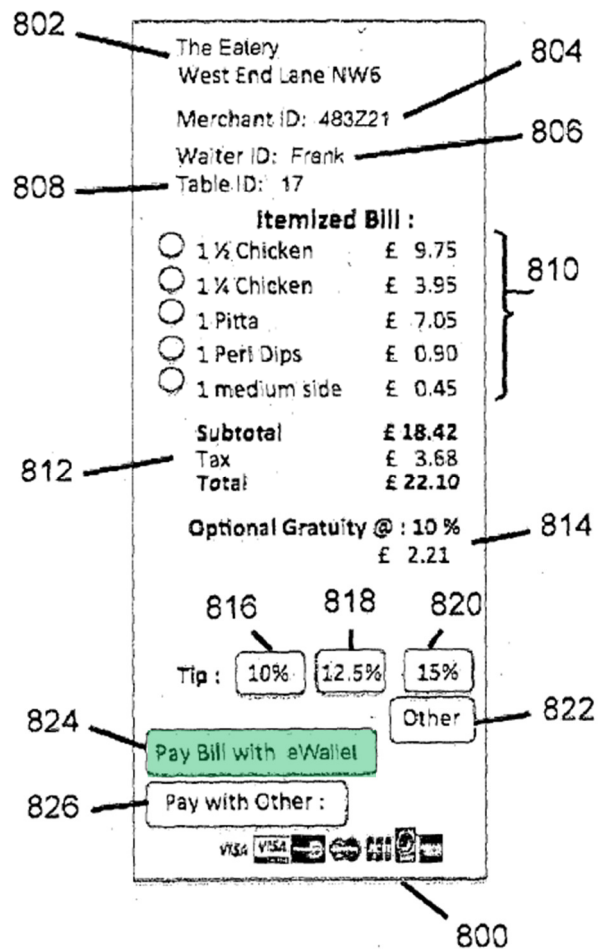
GOOG-1005, Fig. 8 (annotated); GOOG-1003, ¶317

d.   *Claim 5*

[5.0] The method as recited in claim 1 further comprising: causing the mobile device to execute an installed module upon detecting the POS device in a near field of the mobile device,

Limitation [5.0] is taught by Moshal and Dessert. GOOG-1003, ¶318.

Moshal discloses that the mobile device 106 executes an installed module (scanner app) to scan a modified tag (*see* Section XI.A.4.c) when the mobile

device is in a near field of the POS device (e.g., the mobile device user is presented with the tag at a restaurant). GOOG-1005, ¶55; GOOG-1003, ¶319.

With reference to Figure 4 below, Moshal discloses that the scanner app 164 is installed on the mobile device to scan a tag in connection with the scanner 156. GOOG-1005, ¶¶41-42, 55; GOOG-1003, ¶320.
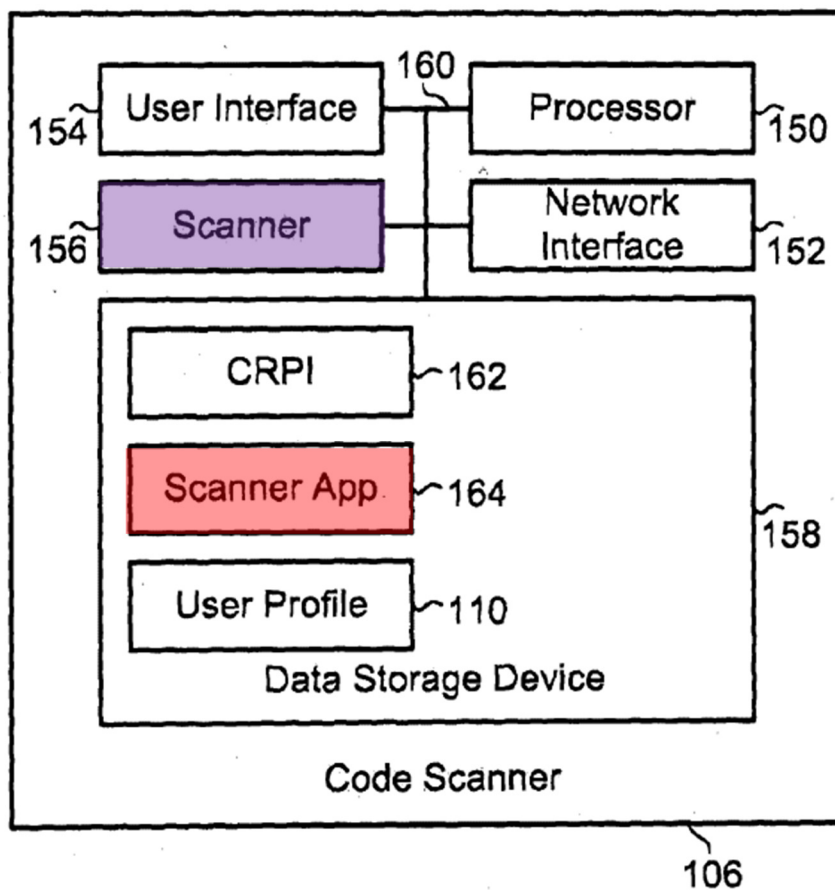
GOOG-1005, Fig. 4 (annotated); GOOG-1003, ¶320

It was well known for readable tags to be coupled to equipment and/or products at a merchant's business. Dessert discloses that the application 113 of the

mobile device 100 scans machine-readable tags 124 "coupled to an electronic cash register (ECR) 412" at a merchant's retail store 12 (check-out system 90B), as shown in Figure 4 below. GOOG-1007, 5:4-14, 6:1-14 (tags provided in merchant premises and/or on individual products). Dessert discloses that the scan tag module 316A of the mobile device's application 113 automatically activates the mobile device's camera 848 to focus and scan on a tag 124. GOOG-1007, 15:9-10. Thus, Dessert discloses that the mobile device application 113 is executed upon detecting that a POS device (e.g., tag coupled to ECR) is in a near field of the mobile device 100. GOOG-1003, ¶321.
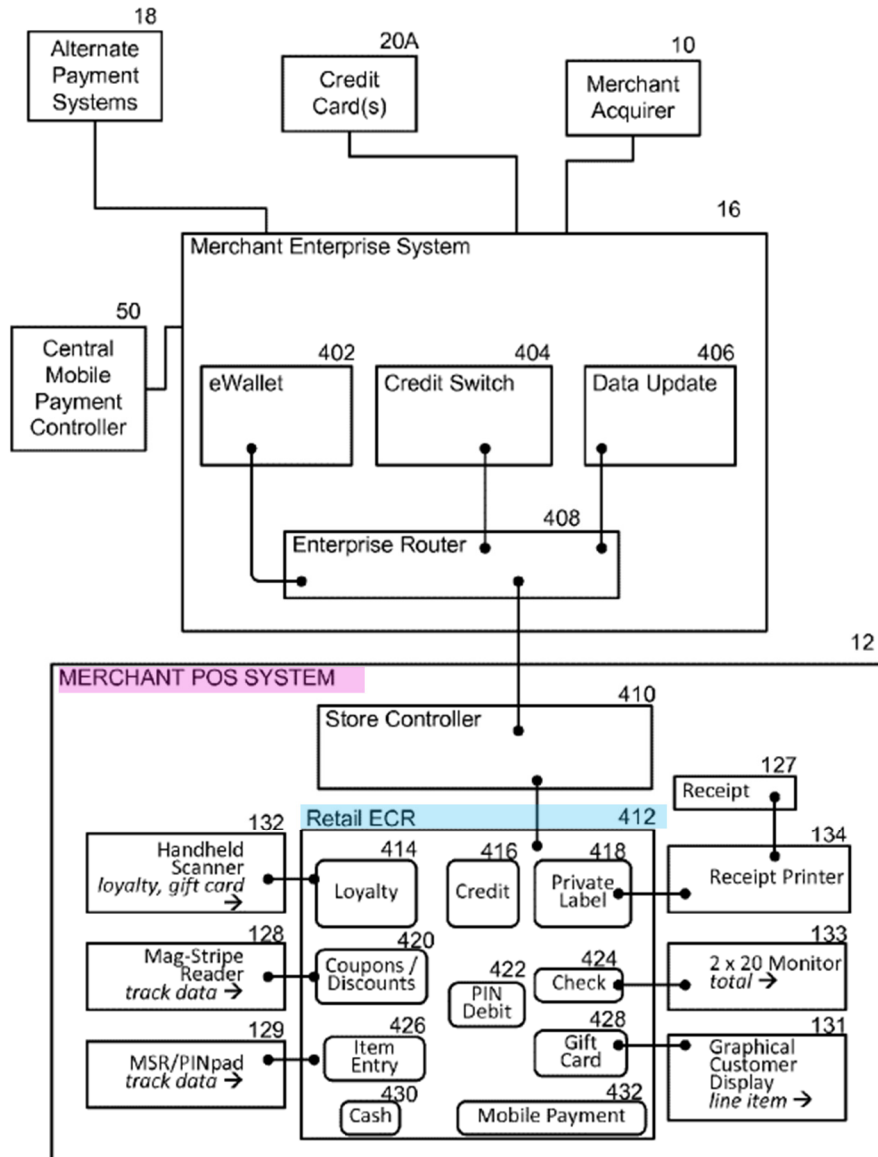
FIG. 4

GOOG-1007, Fig. 4 (annotated); GOOG-1003, ¶321

[5.1] wherein the installed module is executed to receive the data directly from the tag carrying the electronic invoice and the settlement information.

Moshal teaches [5.1] because, as explained in [1.2.3], Moshal discloses that the installed module (scanner app) 164 of the mobile device receives the data directly from the tag carrying the electronic invoice and the settlement information. GOOG-1003, ¶322.

With reference to Fig. 7 below, Moshal's scanner app 164 decodes the tag (step 710) to obtain the electronic invoice and settlement information ("merchant identification code, the bill identification number and the bill details") from the scanned tag (step 708). GOOG-1005, ¶55; GOOG-1003, ¶323.
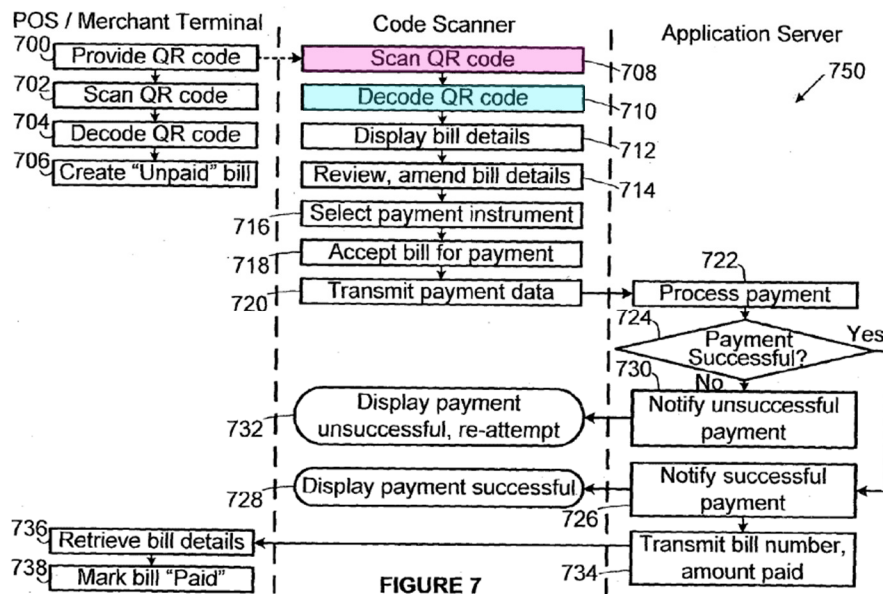
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶323.

e.   *Claim 12*

[12.0] A method for mobile payment, the method comprising:

Limitation [12.0] is identical to [1.0] and is disclosed by Moshal for the

same reasons presented above with respect to [1.0]. GOOG-1003, ¶324.

[12.1] generating a set of data in a point of sale (POS) device, the data including an electronic invoice and settlement information with a merchant associated with the POS device;

Moshal teaches [12.1]. With reference to Fig. 7 below, Moshal discloses

that the POS device 104 creates and provides a set of data (in the form of a QR

code) to be scanned by the user's mobile device 106 to pay the transaction (step

700). GOOG-1005, ¶¶54-55. To create the QR code, the POS terminal 104 at step

700 generates a set of data including an electronic invoice ("all the bill details")

and settlement information ("merchant identification code" and "bill identification

code") with a merchant associated with the POS device. GOOG-1005, ¶54;

GOOG-1003, ¶¶325-326.
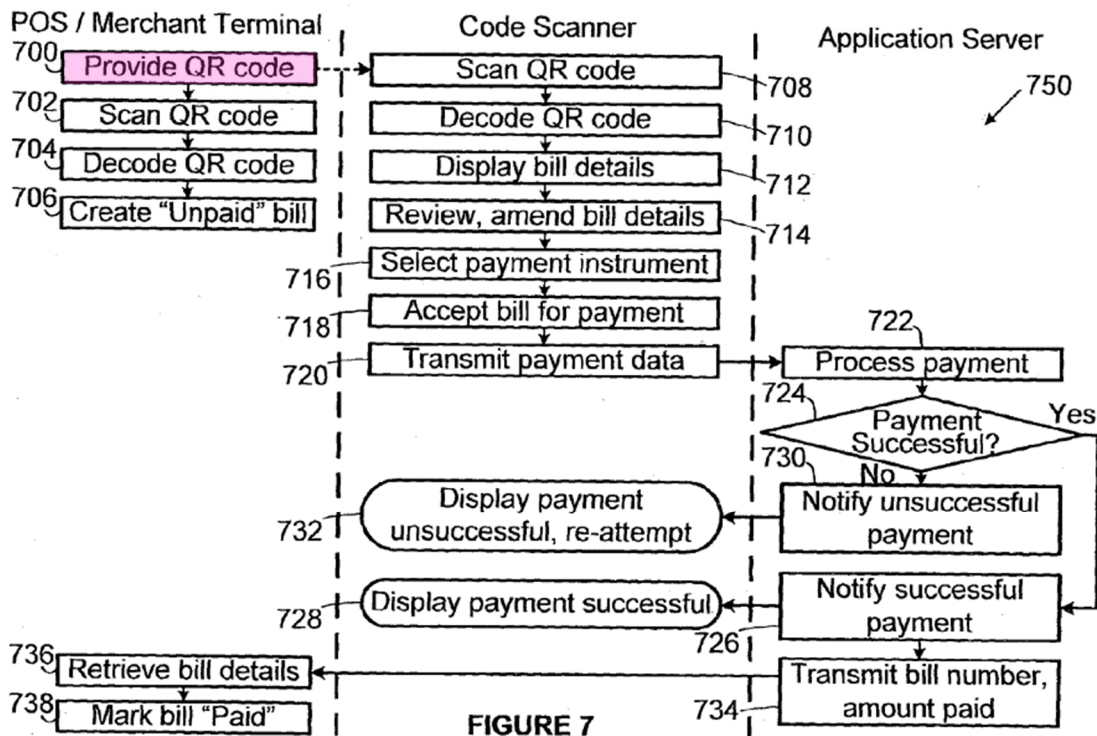
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶325

As described above in Section XI.A.4.c, a POSITA would have been

motivated to modify Moshal to utilize conventional tags such as QR, RFID and

NFC tags. Accordingly, [12.1] is rendered obvious by Moshal and Dessert.

GOOG-1003, ¶¶327-328.

[12.2] embedding the data directly to a tag;

Limitation [12.2] is rendered obvious by Moshal and Dessert, because

Moshal discloses that the data is embedded (encoded) directly to the modified tag.

GOOG-1003, ¶329.

With reference to Figure 7 below, Moshal discloses that at step 700, the POS terminal 104 provides a tag that "**encodes** the merchant identification code 140 in the merchant profile 142, a bill identification code or number, and all the details contained in the bill." GOOG-1005, ¶54; *id.*, ¶55 (mobile device scans and decodes the tag at steps 708 and 710). Thus, Moshal discloses embedding the data directly to a tag. GOOG-1003, ¶330.
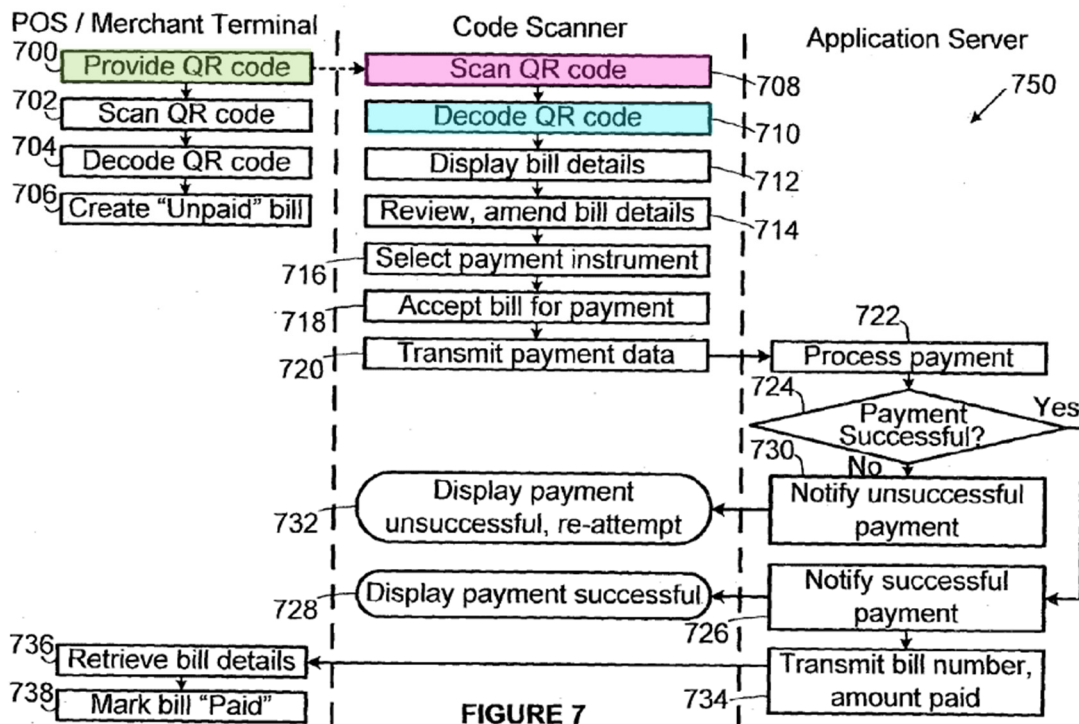
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶330

[12.3] presenting the tag to a mobile device;

Moshal and Dessert render obvious [12.3]. With reference to Figure 7 below, Moshal discloses that at step 700 the modified tag is presented to the mobile device, which scans the modified tag (step 708). GOOG-1005, ¶55; GOOG-1003, ¶331.
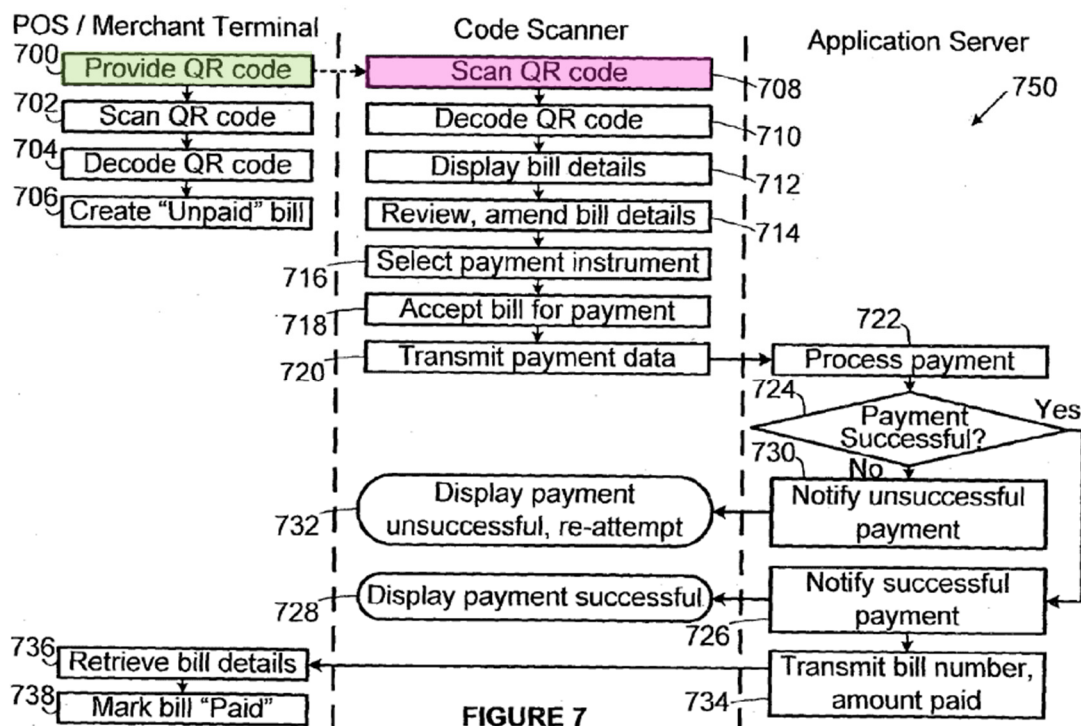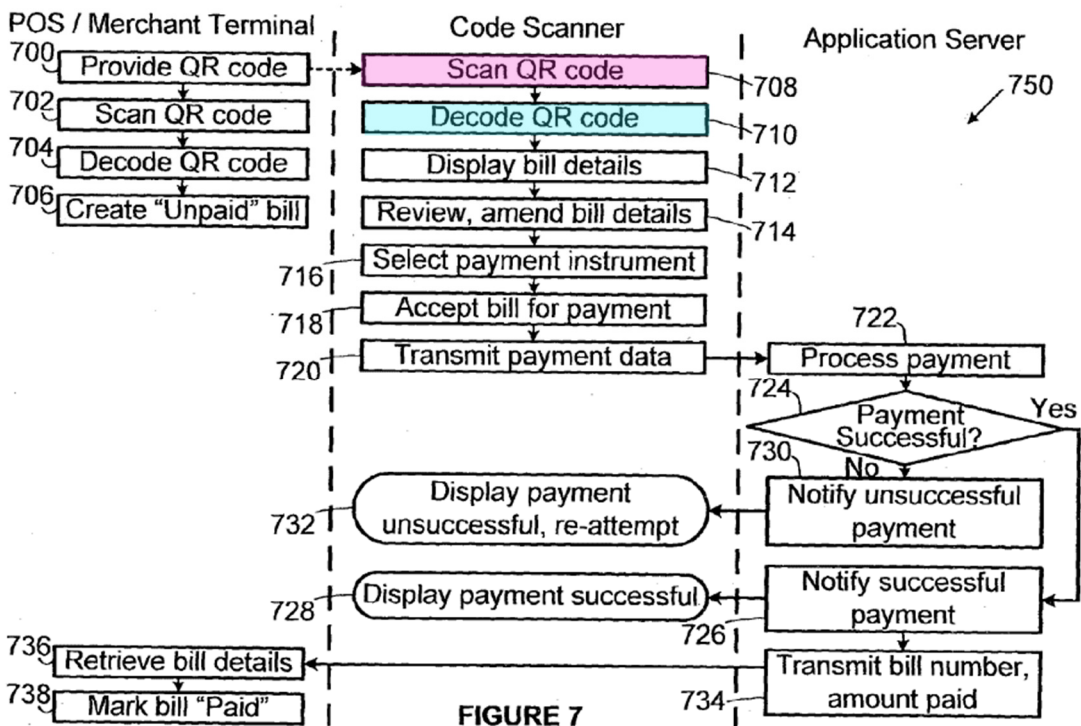

GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶331

[12.4.1] causing the mobile device to capture the data from the tag,

Limitation [12.4.1] is rendered obvious by Moshal and Dessert. With reference to Figure 7 below, Moshal discloses that the mobile device "use[s] the

scanner app 164 and the scanner 156 to scan the payment QR code" (step 708), and

at step 710, "the scanner app 164 decodes the scanned payment QR code to recover

the encoded data that it contains." GOOG-1005, ¶55. Thus, Moshal discloses that

the mobile device captures the data from the modified tag. GOOG-1003, ¶332.

GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶ 332

> **[12.4.2] wherein the mobile device executes an installed
> application therein to retrieve an amount in the electronic invoice
> from the data and generate a payment request in response to the
> captured data,**

Moshal's mobile device executes the scanner app 164 (Fig. 4) (modified

scanner) installed on the mobile device (GOOG-1005, ¶48) to retrieve an amount

in the electronic invoice from the data and generate a payment request in response

to the captured data. GOOG-1003, ¶333.

With reference to Figure 7 below, Moshal discloses that the mobile device

executes the scanner app (modified scanner) to to decode the tag (step 710) and

retrieve an amount in the electronic invoice ("all the bill details") from the data

contained in the tag. GOOG-1005, ¶55; GOOG-1003, ¶334.
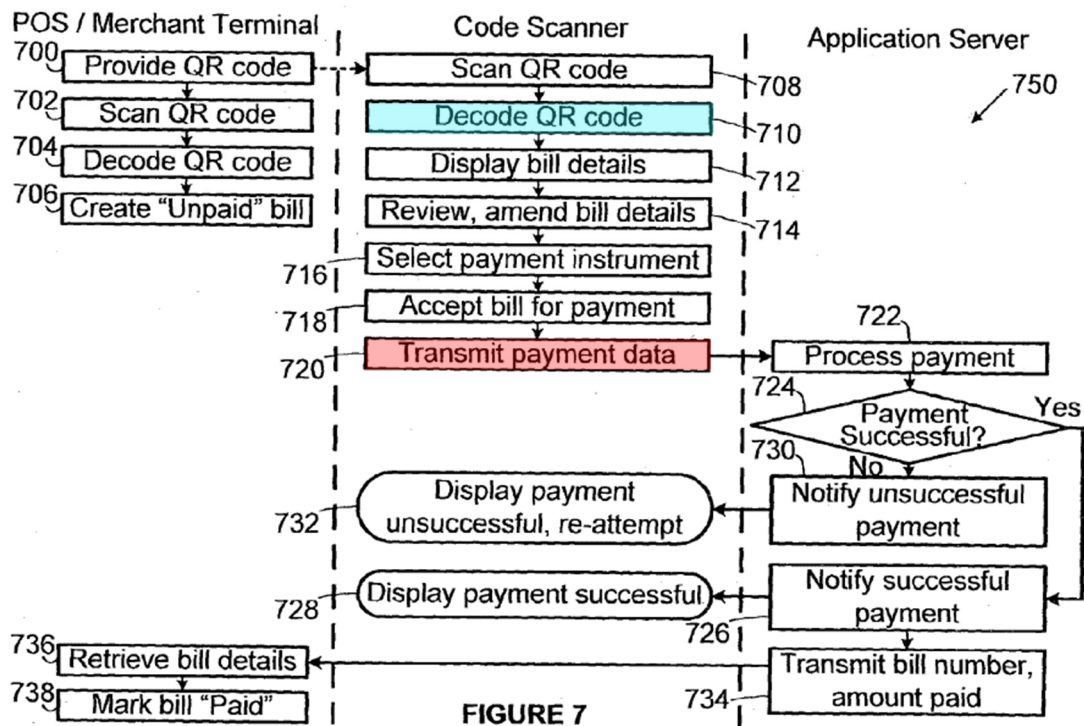
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶334

Figure 8 illustrates the invoice 800 that is created by decoding the tag (step

710) and displayed on the mobile device (step 712, GOOG-1005, ¶55), where the

invoice 800 includes, *inter alia*, "all the details" contained in the bill. GOOG-

1005, ¶¶54-55, 58. The invoice 800 includes a "Total" amount (£22.10) contained

in the tag (i.e., the original invoice amount); GOOG-1003, ¶335.
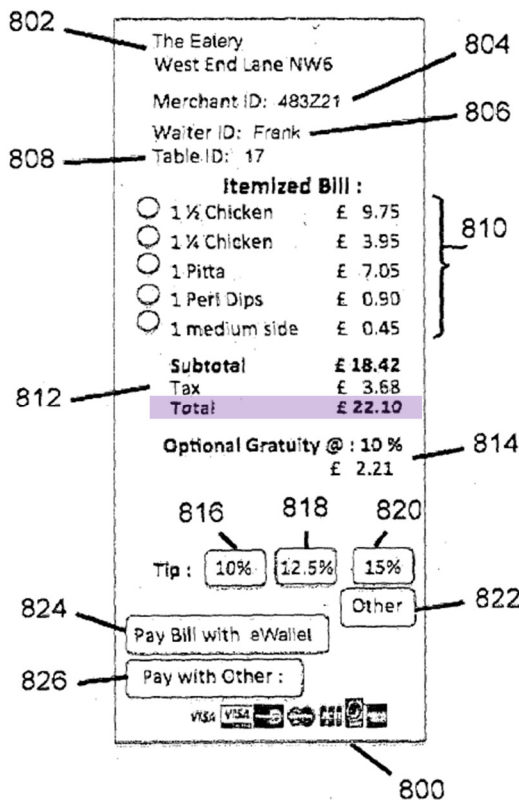
GOOG-1005, Fig. 8 (annotated); GOOG-1003, ¶335

As shown in Figure 7 above, after the user has accepted the bill for payment

(step 718), the mobile device's scanner app generates and transmits a payment

request (step 720) that includes "the merchant identification code, the bill

identification number, the amount due and the details of a payment instrument to

be used for payment...." GOOG-1005, ¶55. Thus, Moshal discloses [12.4.2].

GOOG-1003, ¶336.

[12.4.3] the payment request is denied in the mobile device when the amount is more than a balance of an electronic purse (e-purse) maintained locally in the mobile device,

Limitation [12.4.3] is taught by Jogu. As shown in the excerpts of Figures 22 and 23 below, Jogu discloses the following operations performed in the mobile device:

(1) the mobile device determines whether the balance maintained locally on the mobile device is sufficient for a transaction (step S718 in Fig. 22; screen D18 displayed on mobile device in Fig. 23); and

(2) if the balance is insufficient, the transaction is denied by the mobile device (S719 in Fig. 22; screen D19 displayed on mobile device in Fig. 23). GOOG-1006, 14 ("[T]he data processing unit 131 [of the mobile device] determines whether or not the received payment amount is within the current balance (S718). When the payment amount exceeds the balance, the data processing unit 131 displays the screen D19 shown in FIG. 23 on the display device 137 and notifies the user 12 of the insufficient balance (S719)."); GOOG-1003, ¶337.
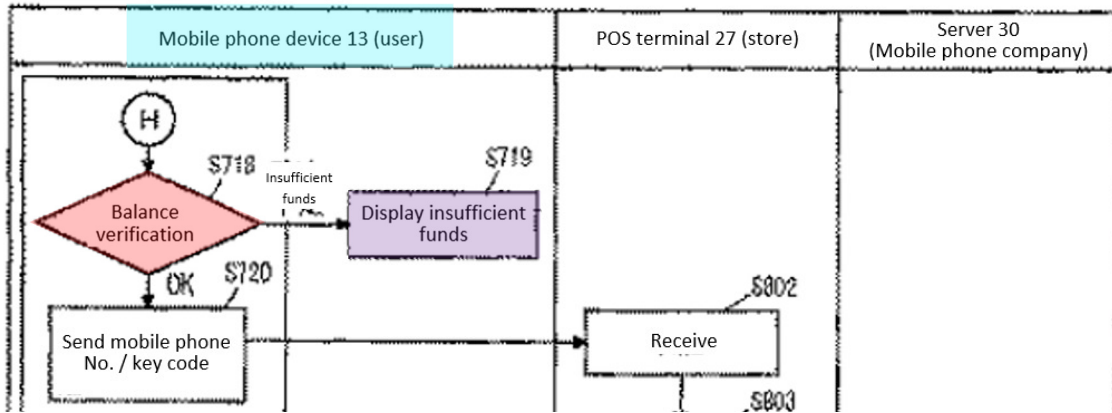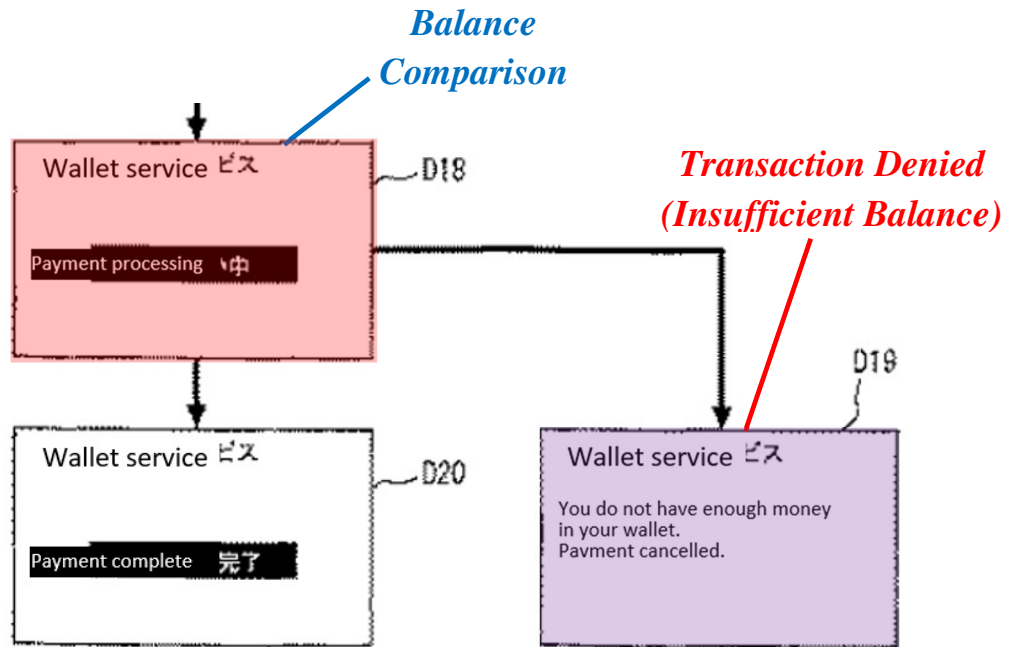
FIG. 22

Fig. 23 (excerpt)

GOOG-1006, Figs. 22 and 23 (annotated excerpts); GOOG-1003, ¶337.

Jogu discloses that a payment request is denied in the mobile device when the amount of the transaction is more than the e-purse balance maintained locally in the mobile device (steps S718 and S719 in Fig. 22, and screen D19 in Fig. 23). GOOG-1003, ¶338. As described above in Section XI.A.4.a, a POSITA would have been motivated to utilize Jogu's conventional balance-check technique before a transaction is conducted with Moshal's e-wallet to confirm the e-purse has sufficient funds to conduct the transaction. GOOG-1003, ¶338.

Thus, Moshal and Jogu render obvious [12.4.3]. GOOG-1006, 14; GOOG-1003, ¶339.

> **[12.4.4] the payment request is sent to a payment gateway when the amount is less than a balance of an electronic purse (e-purse) maintained locally in the mobile device; and**

Limitation [12.4.4] is similar to the features of [1.9] above, and is rendered obvious by Moshal and Jogu for reasons similar to those presented above with respect to [1.9]. As described above with respect to [12.4.3], Jogu teaches that the mobile device determines whether the transaction amount exceeds a balance on the mobile device (step S718 in Fig. 22). GOOG-1003, ¶340.

With reference to Fig. 7 below, Moshal discloses that after the mobile device user has reviewed and verified the information on the displayed bill 800, the mobile device transmits a payment request to the payment gateway (step 720 in

Fig. 7). GOOG-1005, ¶55. By transmitting "the amount due," Moshal teaches that the mobile device has sufficient funds to pay the bill. This is confirmed by Moshal's disclosure that the payment gateway determines whether the payment is successful (step 724), and sends a successful payment notification to the mobile device (step 726) when the amount sent by the mobile device is sufficient to honor the payment request. GOOG;1005, ¶56; GOOG-1003, ¶341.
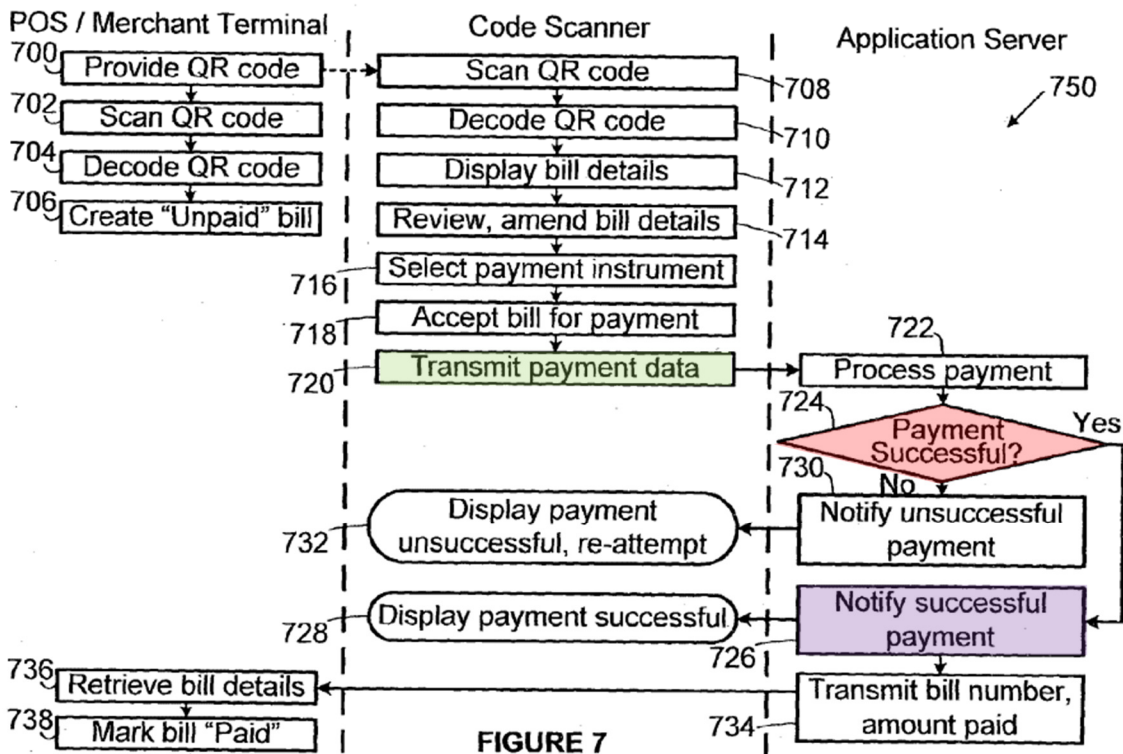

GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶341

In the obvious modification of Moshal using Jogu's balance verification before a payment request is sent, Moshal's payment request would be transmitted from the mobile device to the payment gateway (at step 720 in Fig. 7) after the mobile device verifies that the balance is sufficient to pay the bill (i.e., the amount is less than the e-purse balance maintained in the mobile device). As shown in the annotated excerpt of Figure 22 below, Jogu discloses that the mobile device transmits a payment request (S720) following positive verification in step S718 that the balance is sufficient. GOOG-1006-14; GOOG-1003, ¶342. Thus, in the obvious modification of Moshal using Jogu's balance verification before a payment request is sent, Moshal's mobile device would transmit a payment request to the payment gateway (at step 720 in Fig. 7) after the mobile device has locally verified that the transaction amount does not exceed the balance in the mobile

device (step S718 in Fig. 22 of Jogu). GOOG-1003, ¶¶342-343.

F I G. 2 2
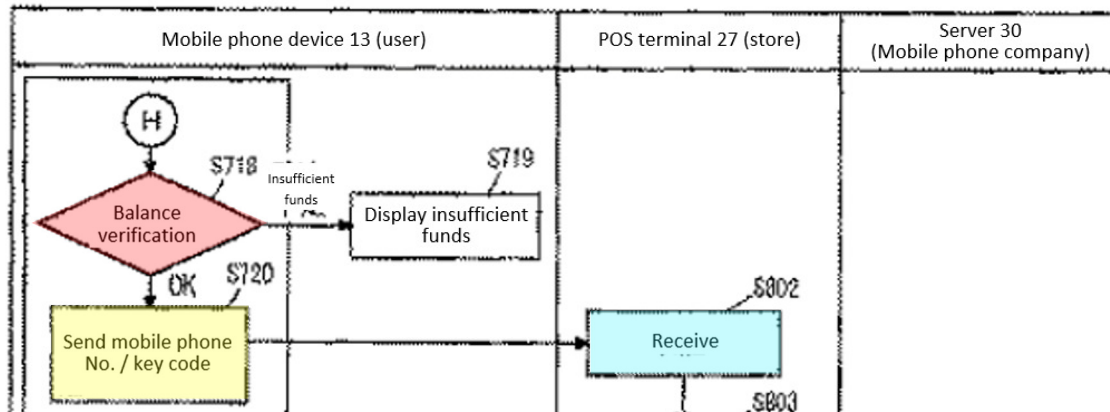
GOOG-1006, Fig. 22 (annotated excerpt); GOOG-1003, ¶343

[12.5.1] receiving a message in the POS device directly from the payment gateway that the electronic invoice has been settled,

Limitation [12.5.1] is substantially similar to [1.10] and is rendered obvious by Moshal and Jogu for the same reasons presented above with respect to [1.10]. As described above with respect to [1.10], the obvious modification of Moshal with Jogu teaches the payment gateway transmitting to the POS device a message that payment of the transaction has been completed, as shown in annotated Figure 6 of Jogu below. GOOG-1006, 6 ("[T]he mobile phone company 10…notifies the POS terminal 27 of the completion of the payment."); GOOG-1006, Fig. 22 (step S907) (payment gateway sends notification of a successful payment completion directly to

the POS device, which receives the notification in step S806), 15 (description of steps S907 and S806 in Fig. 22). GOOG-1003, ¶344.

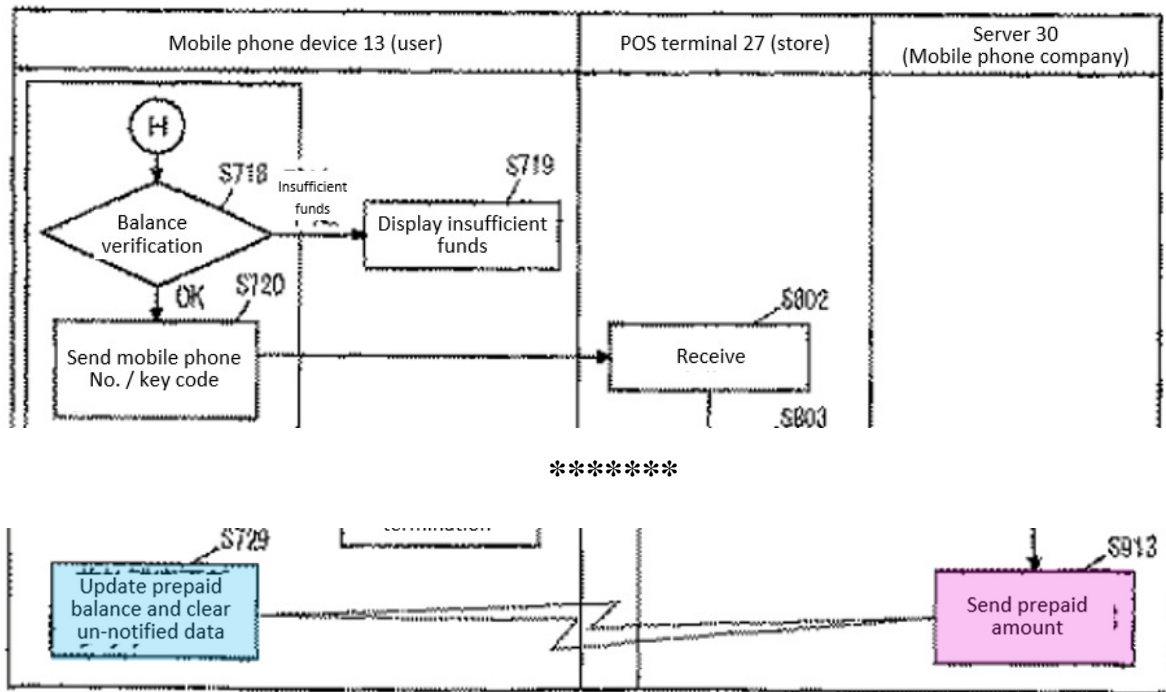## FIG. 6
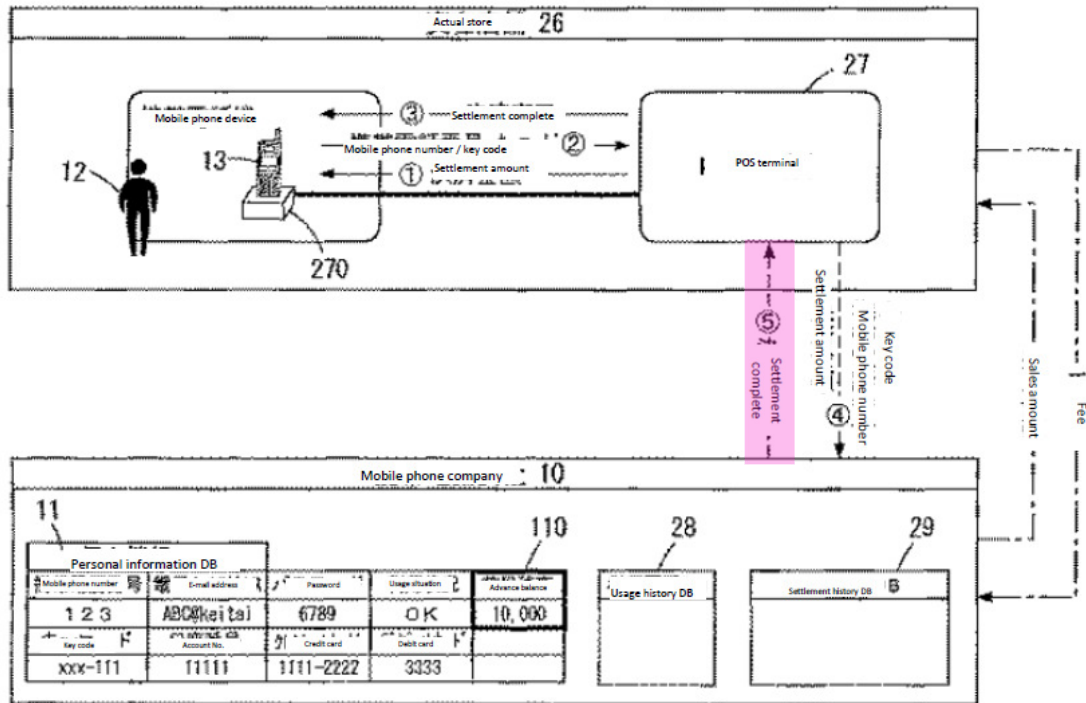
GOOG-1006, Fig. 6; GOOG-1003, ¶345

Accordingly, for the same reasons presented above with respect to [1.10], a POSITA would have been motivated to modify Moshal such that the POS device receives a message directly from the payment gateway that the electronic invoice has been settled. GOOG-1003, ¶345.

[12.5.2] wherein the payment gateway is configured to cause the balance in the e-purse reduced by the amount.

Limitation [12.5.2] is rendered obvious by Moshal and Jogu. GOOG-1003, ¶346.

As shown in Figure 22 below, Jogu discloses that the payment gateway 10 sends the updated balance to the mobile device 13 (step S913 and S729) after a successful transaction. GOOG-1006, Fig. 22, 14-15. This causes the balance on the mobile device to be reduced: "In the mobile phone 13 of the user 12, the transmission / reception unit 135 receives the virtual account balance transmitted from the mobile phone company 10 (S730), **further updates the virtual account balance recorded in RAM132** <u>based on the received virtual account balance</u>…(S729)." GOOG-1006, 21. Thus, the payment gateway causes the balance on the mobile device to be reduced because the reduction is "based on the received virtual account balance"—*i.e.*, if not for the payment gateway sending the updated balance, the balance would not be reduced. GOOG-1003, ¶347.

FIG. 22

GOOG-1006, Fig. 22 (annotated excerpt); GOOG-1003, ¶347

Jogu discloses that the payment gateway 30 causes the balance in the e-purse to be reduced by the amount when using an account with a balance in a mobile device's e-wallet (step S729 in Fig. 22). This updating is advantageous because the mobile device user would then know the current balance before deciding whether the user has sufficient funds to use that balance for another transaction. GOOG-1003, ¶¶348-349. A POSITA would have been motivated to modify Moshal to incorporate this advantageous feature, as taught by Jogu, for the same

reasons presented above in Section XI.A.4.b. Accordingly, Moshal and Jogu render obvious [12.5.2]. GOOG-1003, ¶¶348-349.

Thus, claim 12 is rendered obvious by Moshal, Jogu, and Dessert. GOOG-1003, ¶350.

f.   *Claim 13*

[13.0] The method as recited in claim 12, wherein the tag is presented near the mobile device to allow a user of the mobile device to use the mobile device to capture the data.

Limitation [13.0] is substantively similar to limitation [2.0]. Limitation [13.0] is disclosed by Moshal for the same reasons presented above with respect to limitation [2.0]. GOOG-1003, ¶¶351-353.

g.   *Claims 3 and 14*

[3.0 / 14.0] The method as recited in claim [2 / 13], wherein the POS device [provides / is provided with] security and authentication to generate the electronic [bill / invoice] [and transfer the data to the tag].

Moshal and Dessert render obvious [3.0] and [14.0]. Moshal discloses that the POS device 104 prepares and presents the modified tag at step 700. GOOG-1005, ¶¶54-55. Moshal and Dessert both disclose that the bill/invoice is contained in the tag. GOOG1-1005, ¶¶54-55; GOOG-1007, 10:3-17, 10:50-60, and Figs. 2E and 2G; GOOG-1003, ¶¶308, 354-355.

With reference to Figure 1 below, Dessert illustrates that a POS device (Merchant POS System) 12 provides (and is provided with) security (NFC-linked secure-element) and authentication (unique terminal identifier and merchant identifier) to generate the electronic bill and transfer the data to a tag 124 that is scanned by a customer's mobile device 100. GOOG-1003, ¶¶309, 356.
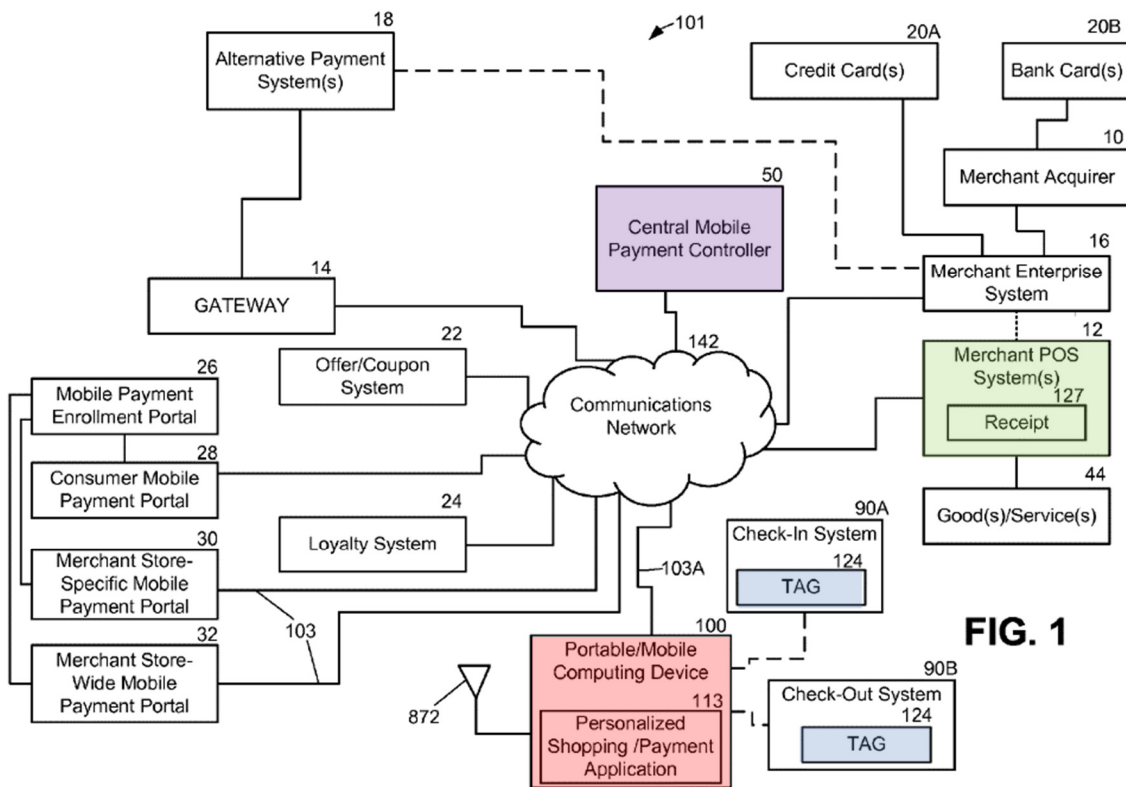

GOOG-1007, Fig. 1 (annotated); GOOG-1003, ¶¶309, 356

Dessert discloses that the tag 124 "may comprise a **unique merchant identifier and a unique terminal (or electronic cash register) identifier**." GOOG-1007, 5:7-21, 12:11-16 (unique identifiers are "contained within the

machine-readable code."). GOOG-1003, ¶¶310, 357 (citing GOOG-1007, 7:12-

20).

Dessert discloses that the tag may be a machine-readable code (e.g., NFC

tag) that is "linked to a secure-element." GOOG-1007, 6:25-34, 11:65-12:7. Thus,

Dessert discloses that the tag 124 is created with a "secure-element," and the tags

124 are provided on electronic cash registers in the premises of the POS device.

GOOG-1007, 6:1-14, 6:25-34, 11:65-12:7. Therefore, Dessert discloses that the

POS device provides security to generate the tag. GOOG-1003, ¶¶311, 358.

Dessert discloses that the payment gateway 50 utilizes the unique terminal

and merchant identifiers in the tag to authenticate the POS device when

authorizing the transaction conducted with the tag. GOOG-1007, 7:21-52. Thus,

Dessert discloses that the POS device provides (and is provided with) security

(NFC-linked secure-element) and authentication (unique terminal identifier and

merchant identifier) to generate the electronic bill/invoice and transfer the data to

the tag 134. GOOG-1003, ¶¶312, 359.

A POSITA would have been motivated to modify Moshal so that its POS

device 104 provides (and is provided with) security (e.g., NFC-linked secure

element) and authentication (e.g., POS device identifier) to generate the electronic

bill and transfer the data to the tag, to promote security in the transaction and

facilitate authorization of a transaction using such information provided in the tag,

as taught by Dessert. GOOG-1007, 7:1-7; GOOG-1003, ¶¶313, 360.

B.   Challenge #2: Claims 6, 15, and 16 are rendered obvious by Moshal in view of Jogu, Dessert, and Ohlhausen

Ohlhausen discloses the additional "security information" features of claims

6 and 15. GOOG-1003, ¶363.

1.   Claim 6

[6.0/15.0] The method as recited in claim [5/14], wherein the data further includes security information [about/of] the merchant associated with the POS device,

Moshal teaches [6.0] and [15.0]. Moshal discloses that the data in the tag

includes a merchant identifier unique to the merchant terminal. GOOG-1005, ¶45

(payment gateway assigns a unique merchant identification code to each merchant

business), ¶54 (tag encoded with merchant identifier), ¶52. GOOG-1003, ¶¶364,

370.

[6.1/15.1] the security information includes an account and bank information [of the registered merchant], an identifier of the tag or the POS device.

Moshal in view of Dessert and Ohlhausen teaches [6.1] and [15.1]. GOOG-

1003, ¶¶365, 371.

As shown in Figure 1 below, Ohlhausen discloses that a merchant computer 100 creates a barcode (barcode generator 205) for use in conducting transactions with a customer computer 130 (e.g., smartphone, GOOG-1008, ¶21), which uses a payment application 300 to scan the barcode 125 to obtain transaction details. GOOG-1008, ¶¶19-20. Ohlhausen discloses that the Merchant Information 230, which is encoded into the barcode, "may include…**bank or other payment details of the merchant**,…and/or **merchant ID**." GOOG-1008, ¶19; GOOG-1003, ¶366.

Figure 1
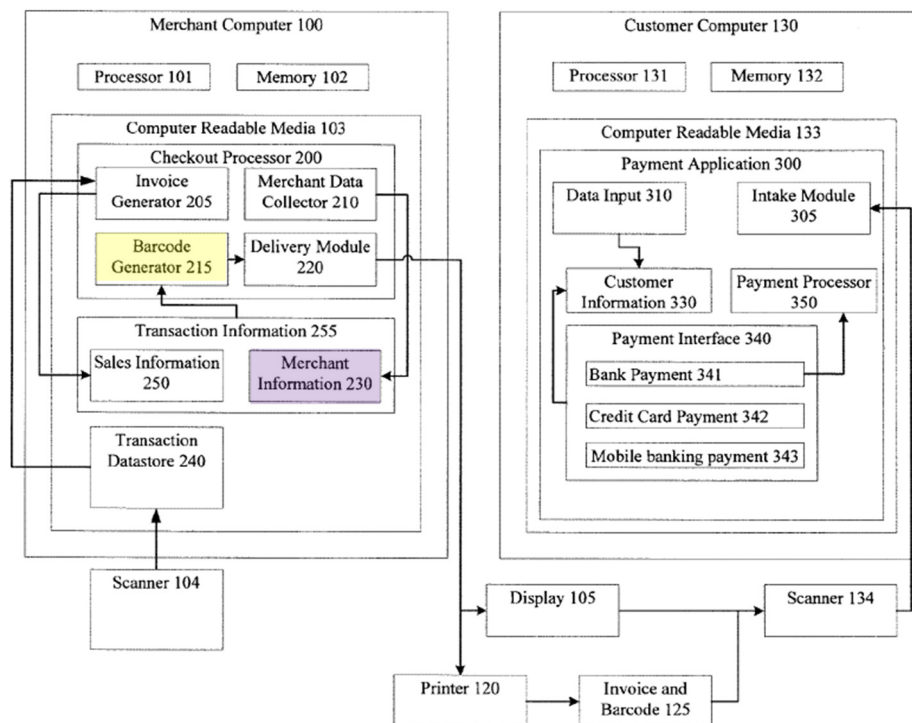
GOOG-1008, Fig. 1 (annotated); GOOG-1003, ¶366

Ohlhausen discloses that the information encoded into the barcode includes merchant settlement information ("bank or other payment details of the merchant") and a merchant ID. GOOG-1008, ¶19. The merchant ID corresponds to the identifier of the POS device as recited in [6.1] because the merchant computer generates the barcode. GOOG-1008, ¶28, 20 (customer computer decodes the merchant information from the scanned barcode "to effect the payment process."). GOOG-1008, ¶20; GOOG-1003, ¶¶367, 371.

A POSITA would have been motivated to modify Moshal to include security information including an account and bank information of the registered merchant and that merchant's ID, as taught by Ohlhausen (GOOG-1008, ¶19), in the tag created by Moshal's POS device, to provide the mobile device user greater flexibility in available payment options. Ohlhausen discloses that customized payment options are provided based on the merchant information included in the scanned tag. GOOG-1008 ¶33. This modification would have been the combination of prior art elements (including merchant payment information, as disclosed by Ohlhausen, with the merchant ID and bill identification that are encoded in Moshal's tag) according to known methods (encoding the merchant payment information in the tag) to yield predictable results of providing the merchant payment information in the scannable code. GOOG-1003, ¶368.

Dessert discloses that the tag 124 may comprise a unique terminal (ECR) identifier. GOOG-1007, 5:7-21, 12:11-16. If a merchant has multiple POS devices, a POSITA would have been motivated to modify Moshal in view of Ohlhausen and Dessert to make the POS device identifier encoded into a tag unique for each POS device. GOOG-1003, ¶369.

2.   Claim 16

[16.0] The method as recited in claim 15, wherein the message received in the POS device shows how much has been received from the user of the mobile device.

With reference to Figure 7 below, Moshal discloses that if payment is successful (Yes in step 724), the payment gateway transmits a message to the POS/Merchant terminal containing the bill number and the "**amount paid**" (step 734). GOOG-1005, ¶57; GOOG-1003, ¶¶372-373.
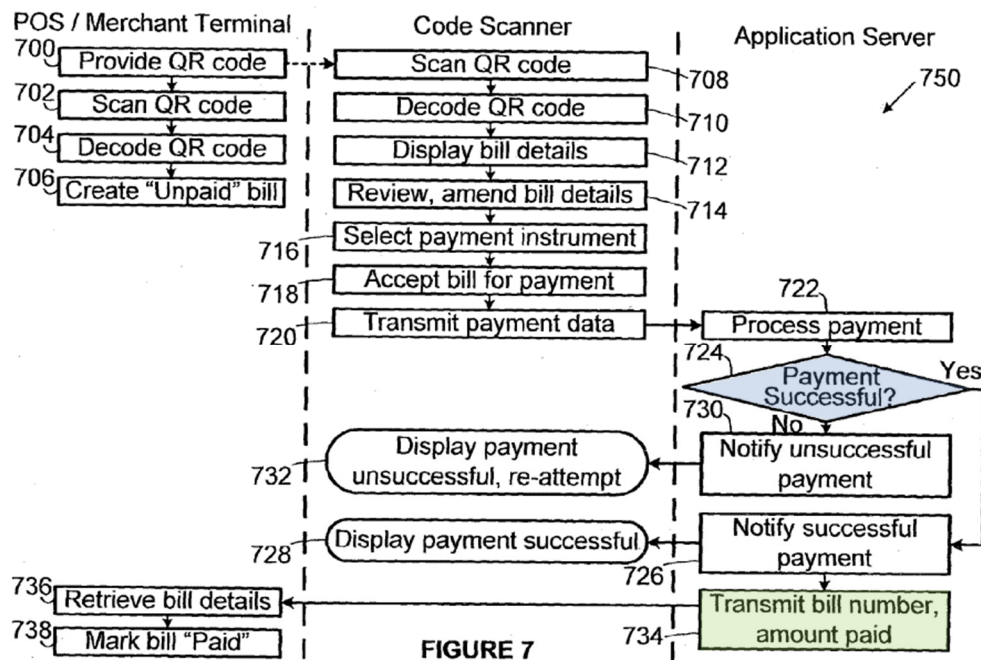
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶373

As described above with respect to [1.10], Moshal suggests that the POS and merchant terminals 104, 108 are provided in the same location (GOOG-1005, ¶54), and it was known to integrate a POS terminal and a merchant terminal into one component in a payment system. GOOG-1003, ¶374 (citing GOOG-1012, Figs. 2-3, 4:7-12, 4:23-32, and 5:35-40). Therefore, Moshal teaches [16.0]. GOOG-1003, ¶374.

A POSITA would have been motivated to modify Moshal to transmit a successful payment confirmation from the payment gateway to the POS terminal, as described above with respect to [1.10]. GOOG-1003, ¶375. It was known to transmit a successful payment notification from a payment gateway directly to a

POS device, as disclosed by Jogu (see [1.10]). GOOG-1003, ¶375 (citing GOOG-1013, ¶28, Fig. 3, and GOOG-1011, Fig. 4A, ¶62).

Modifying Moshal to provide notification of the amount paid (step 734 in Figure 7) to the POS device, in view of Jogu's disclosure that the payment gateway sends a payment confirmation directly to the POS device, would notify Moshal's POS device that the invoice amount is met by the amount paid by the mobile device, as taught by Jogu and discussed above with respect to [1.10]. Therefore, claim 16 is rendered obvious by the teachings of Moshal and Jogu. GOOG-1003, ¶376.

C. Challenge #3: Claims 7-11 and 17 are rendered obvious by Moshal in view of Jogu, Dessert, Ohlhausen, and Aabye

Claims 7, 9, and 17 recite that the mobile device and the payment gateway communicate over a "secured channel." Claim 10 recites that the mobile device includes a "secure element." These features are disclosed by Aabye. GOOG-1003, ¶377.

1. Overview of Aabye

Like the '046 Patent, Aabye is directed to a mobile payment system. With reference to Figure 2 below, Aabye discloses that when a consumer uses a payment application 109 on a mobile device 102 to conduct a transaction with a POS

terminal 130, a merchant terminal 132 in communication with the POS terminal
130 obtains payment authorization from a payment gateway (payment processing
network 134 and mobile gateway 138). GOOG-1009, ¶¶34, 37, 39-40. The mobile
device 102 has a secure data storage 110 that stores "data for which enhanced
security is desired, for example, transaction data, personal account data,
identification data, authentication data, access control data for an application or
device function, etc." GOOG-1009, ¶36. Aabye discloses that communications
between the mobile device 102 and the payment gateway 134, 138 may be
encrypted to provide a "secure channel" between the payment application 109 of
the mobile device 102 and the payment gateway 134, 138. GOOG-1009, ¶¶42, 66,
54, 57-59; GOOG-1003, ¶378.
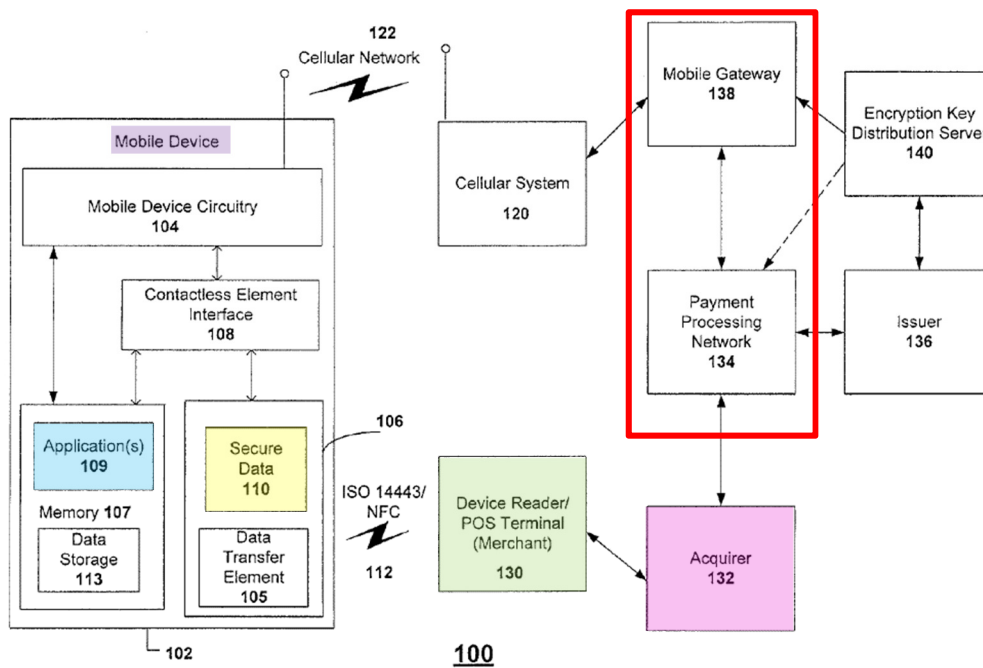
Figure 2

GOOG-1009, Fig. 2 (annotated); GOOG-1003, ¶378

A POSITA would have been motivated to modify Moshal's payment network to establish a secure channel, by encryption, between the mobile device and the payment gateway, as taught by Aabye. GOOG-1003, ¶379. Establishing such a secure channel through encryption between the mobile device and the payment gateway "is desirable as encrypting the transaction data may prevent unauthorized users or applications from accessing the data, either on the phone or while the data is in transit over a communications network." GOOG-1009, ¶54; GOOG-1003, ¶379. A POSITA would have had a reasonable expectation of success creating a secure channel between Moshal's mobile device and payment

gateway because communications between the two are already encrypted. GOOG-1005, ¶83 ("[T]o improve security of the system 100, transmission of data from the user profile 110 to the [payment gateway] 102 by the scanner app 164 can be encrypted."); GOOG-1003, ¶379.

2. Claim 7

[7.0] The method as recited in claim 6, wherein said sending the payment request from the mobile device to the payment gateway comprises:

Claim 6 is rendered obvious by Moshal, Jogu, Dessert, and Ohlhausen. GOOG-1003, ¶380.

[7.1] transporting the payment request over a secured channel to the payment gateway,

With reference to Figure 7 below, Moshal discloses that the mobile device transmits a payment request to the payment gateway (step 720), and communications between the two are encrypted. GOOG-1005, ¶55, 83, 42; GOOG-1003, ¶381.
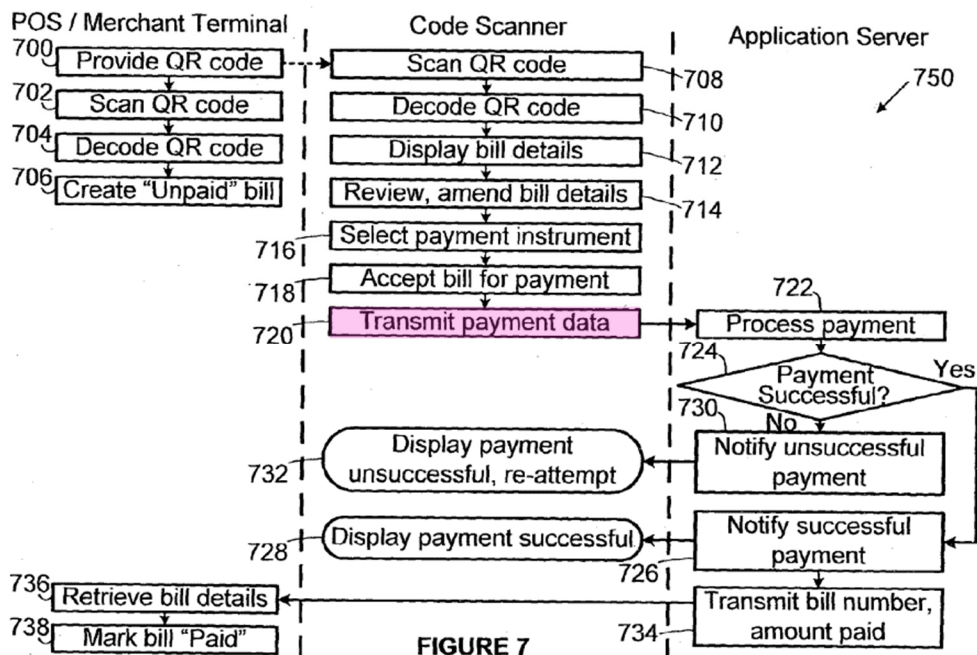
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶381

It was well known to create a secured channel between the mobile device

and payment gateway, as taught by Aabye, which discloses that communications

between the mobile device 102 and the payment gateway 134, 138 are encrypted to

establish a "secure channel" between the mobile device 102 and the payment

gateway 134, 138. GOOG-1009, ¶66. As described above in Section XI.C.1, a

POSITA would have been motivated to modify Moshal to provide such a secure

channel between the mobile device and the payment gateway. GOOG-1003, ¶382.
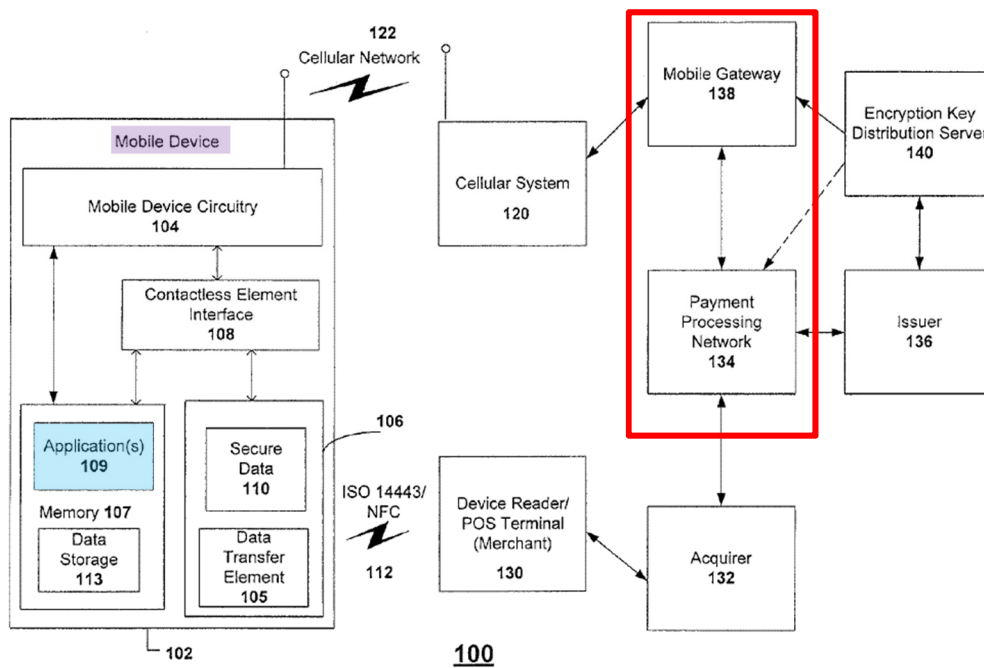
Figure 2

GOOG-1009, Fig. 2 (annotated); GOOG-1003, ¶382

[7.2] *wherein the payment gateway is configured to perform the monetary transaction per the payment request by deducting the total amount from the e-purse and generates the confirmation for the POS device.*

As described above with respect to [12.5.2], Jogu discloses that following a successful transaction, the payment gateway deducts the total amount from the e-purse balance in the mobile device and notifies the mobile device of the deducted amount, as shown in the excerpt of Figure 22 below (step S913 and S729). GOOG-1006, 14-15, 21; GOOG-1003, ¶383.

F I G. 2 2
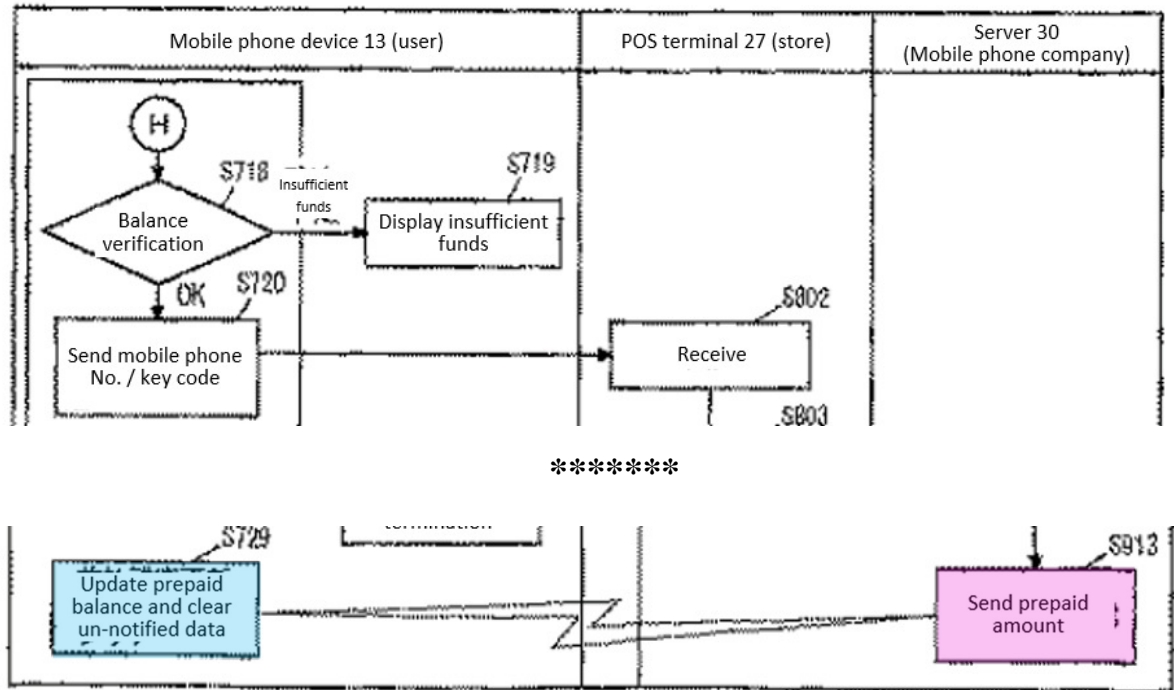
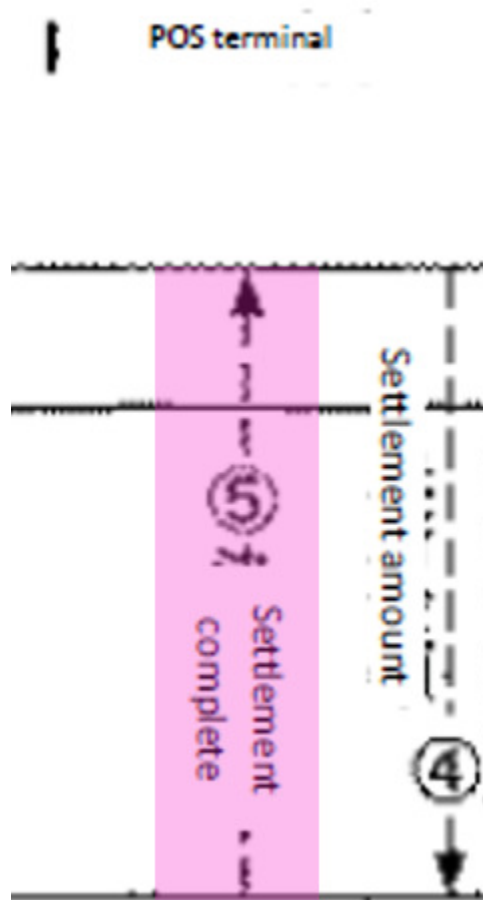GOOG-1006, Fig. 22 (annotated excerpt); GOOG-1003, ¶383

As described above with respect to claim [1.10] and as shown below in

Figure 6, Jogu discloses that the payment gateway 30 transmits confirmation to the

POS terminal that the payment was successful. GOOG-1006, 6 ("[T]he mobile

phone company 10…notifies the POS terminal 27 of the completion of the

payment."). GOOG-1003, ¶384.

FIG. 6
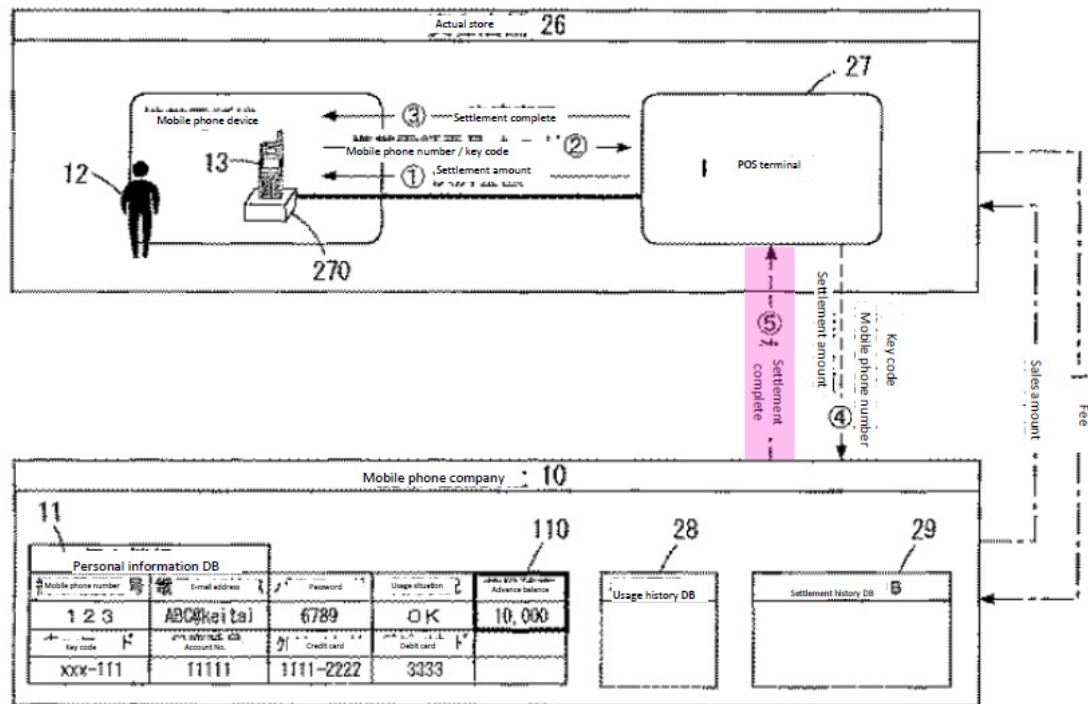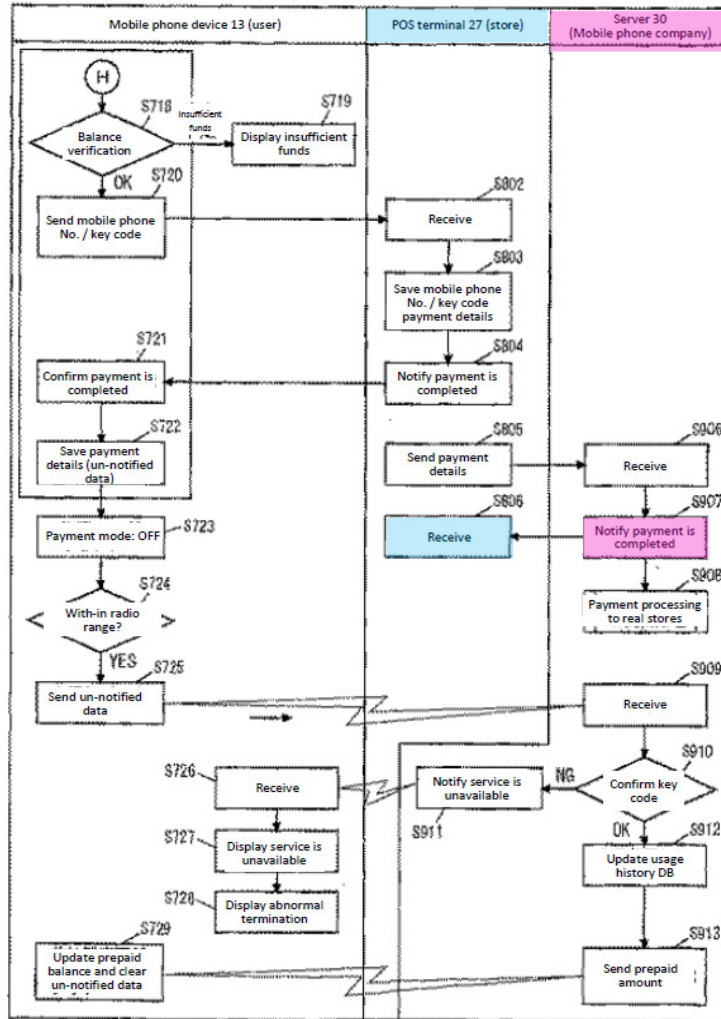

GOOG-1006, Fig. 6; GOOG-1003, ¶384

Below is an enlarged version of the pertinent portion of Fig. 6:

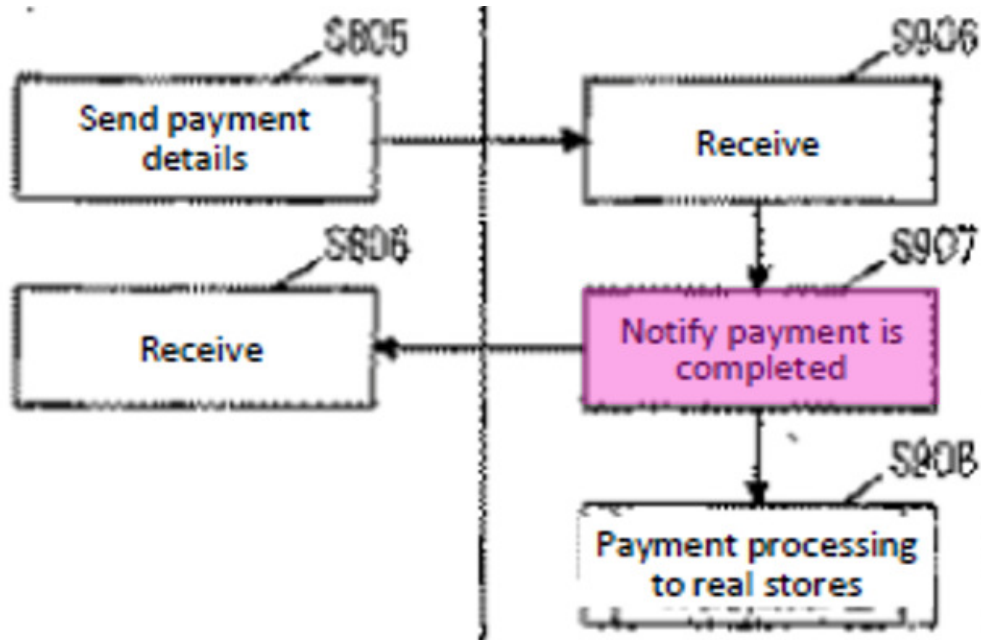GOOG-1006, Fig. 6 (enlarged, annotated excerpt); GOOG-1003, ¶384

Similarly, with reference to Fig. 22, Jogu discloses that the payment gateway

10 sends a successful payment notification directly to the POS device 27 (step

S906). GOOG-1006, 15 ("[T]he data processing unit 301 transmits the payment

completion information to the POS terminal 27 (S907)."); GOOG-1003, ¶385.

FIG. 22

GOOG-1006, Fig. 22 (annotated); GOOG-1003, ¶385

Below is an enlarged version of the pertinent portion of Fig. 22:

GOOG-1006, Fig. 22 (enlarged, annotated excerpt); GOOG-1003, ¶385

3. Claim 8

[8.0] *The method as recited in claim 7, wherein said displaying the electronic invoice on the display of the mobile device comprises:*

With reference to Figure 7 below, Moshal discloses that the mobile device displays the electronic invoice (see Fig. 8) on the display of the mobile device (step 712). GOOG-1005, ¶55; GOOG-1003, ¶386.
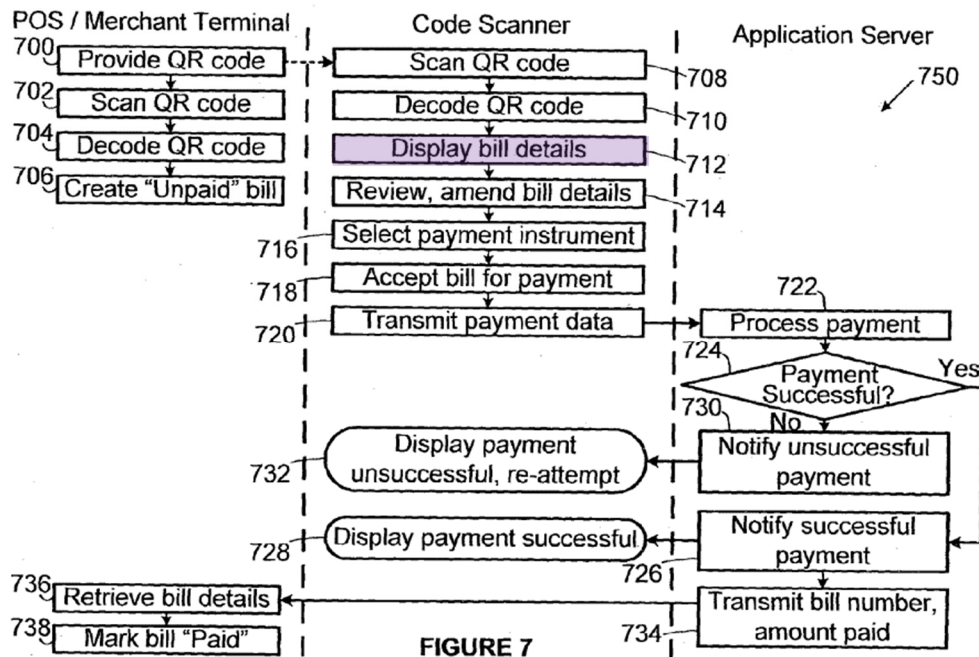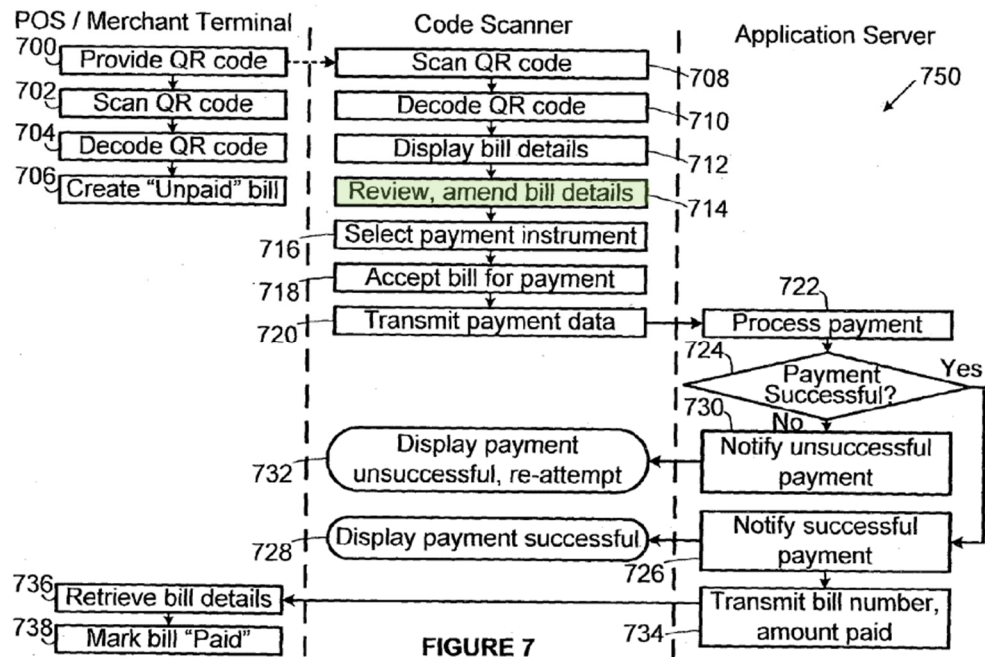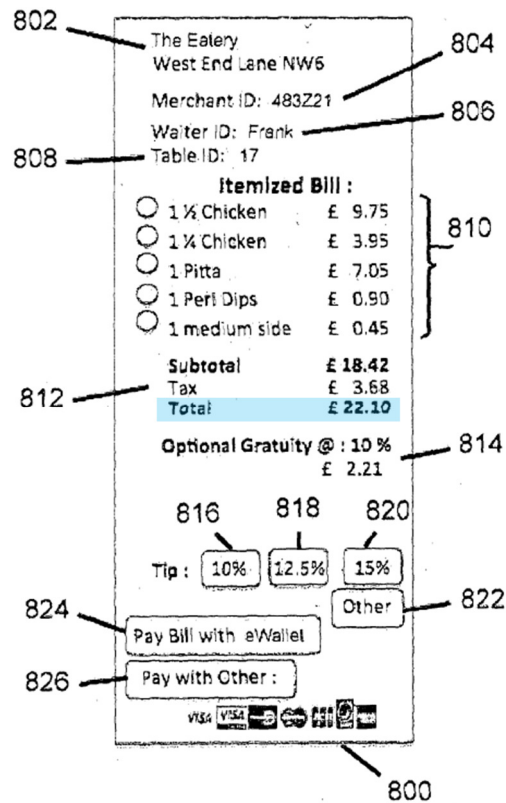
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶386

[8.1] *allowing the user to modify the amount in the electronic invoice when needed*;

With reference to Figures 7 and 8 below, Moshal discloses allowing the user

of the mobile device at step 714 to "**amend the displayed data, if necessary**.".

GOOG-1005, ¶55. As shown in Figure 8, the displayed bill details include the

original (pre-tip) amount of the invoice (£22.10). GOOG-1003, ¶387.

GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶387

GOOG-1005, Fig. 8 (annotated); GOOG-1003, ¶387

[8.2] *paying the total amount with an electronic payment provided by an installed module in the mobile device*,

As shown in Figure 7 below, Moshal discloses that after the user has selected a payment instrument (step 716), the mobile device's scanner app (installed module) pays the total amount (original invoice amount plus any tip added using icons 816, 818, 820, 822 in Fig. 8) by transmitting at step 720 "**the amount due** and the details of a payment instrument to be used for payment...."). GOOG-1005, ¶55; GOOG-1003, ¶388.
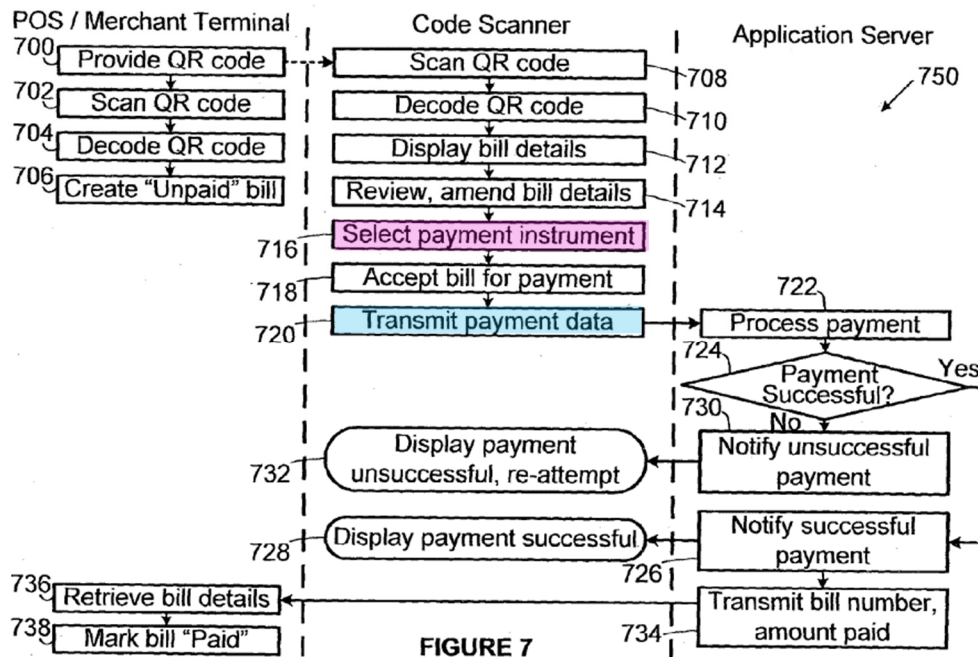
GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶388

[8.3] *wherein the installed module in the mobile device is configured to generate the payment request including the data pertaining to the electronic invoice to the payment gateway for processing.*

The scanner app of Moshal's mobile device generates a payment request that includes data pertaining to the electronic invoice (GOOG-1005, ¶55: payment request includes "the merchant identification code, the bill identification number, the amount due and the details of a payment instrument to be used for payment"), and transmits the payment request to the payment gateway (step 720). GOOG-1005, ¶55. Thus, Moshal teaches [8.3]. GOOG-1003, ¶389.

4.   Claims 9 and 17

[9.0 / 17.0] The method as recited in claim 8 / 12, wherein data exchange between the mobile device and the payment gateway is conducted in a secured channel established therebetween [between the mobile device and the payment gateway].

Limitations [9.0] and [17.0] are substantively similar to limitation [7.1], and are rendered obvious by Moshal and Aabye for the same reasons presented above with respect to limitation [7.1]. GOOG-1005, ¶83; GOOG-1009, ¶66; GOOG-1003, ¶¶390, 394.

5.   Claim 10

[10.0] The method as recited in claim 9, wherein the mobile device includes a secure element providing security and confidentiality required to support secure data communication between the mobile device and the payment gateway.

With reference to Figure 2 below, Aabye discloses that the mobile device includes a secure data storage element 110 (GOOG-1009, ¶35) that provides security and confidentiality required to support secure data communication between the mobile device and the payment gateway. GOOG-1009, ¶¶35-36 ("Secure data storage 110 may also be used to store other data for which enhanced security is desired, for example, transaction data, personal account data, identification data, authentication data,…."). As described above with respect to [7.1], Aabye discloses establishing, by encryption, a secure channel between the mobile device and

payment gateway. GOOG-1009, ¶66. To perform this encryption, Aabye discloses

that encryption keys are distributed between the mobile device and the payment

gateway 134, 138. GOOG-1009, ¶¶57-59. Aabye discloses that "secure data storage

110 may contain authentication data, user identification data, transaction record data,

account balance data, etc." GOOG-109, ¶37. Thus, Aabye teaches [10.0]. GOOG-
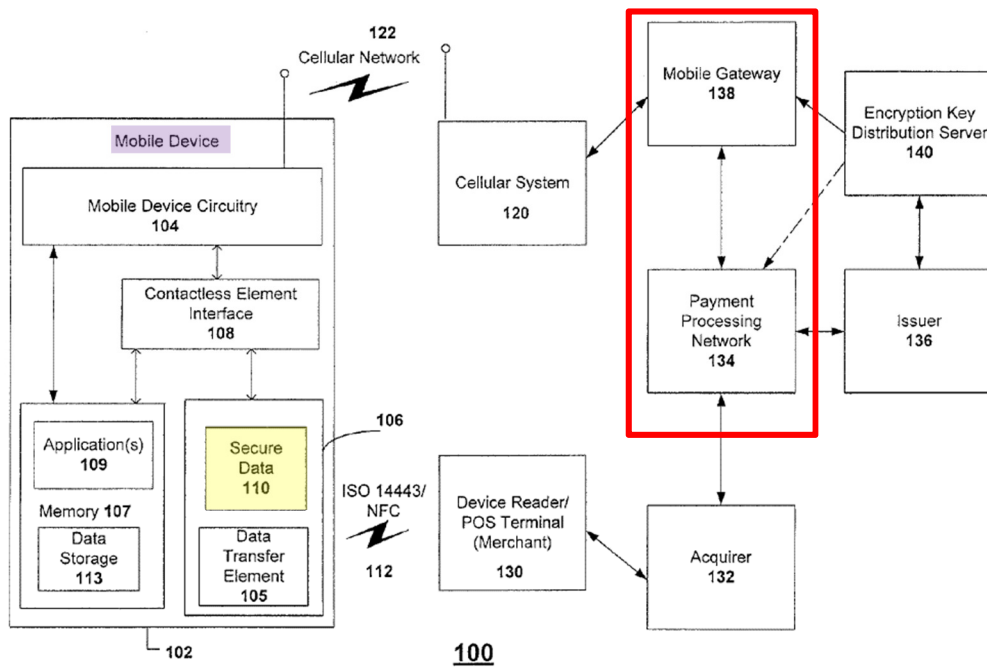
1003, ¶391.

Figure 2

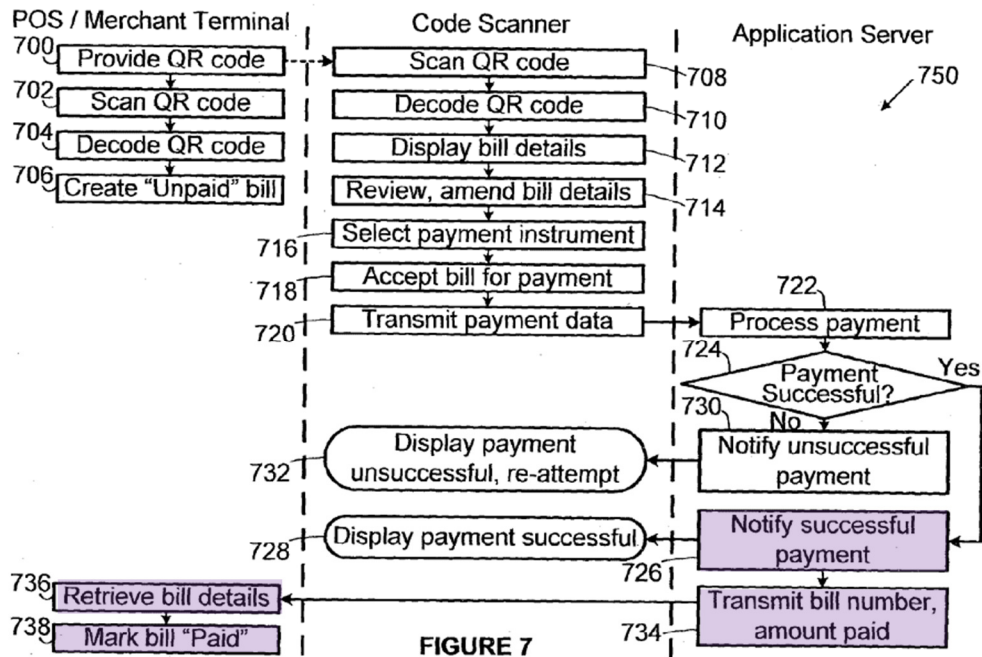GOOG-1009, Fig. 2 (annotated), GOOG-1003, ¶391

As described above in Section XI.C.1, a POSITA would have been motivated

to modify Moshal to provide a secure channel between the mobile device and the

payment gateway, as taught by Aabye, and storing encryption keys in a secure data

storage of the mobile device would promote the integrity of the secure channel. GOOG-1009, ¶54 (encryption prevents unauthorized access to data "either on the phone or while the data is in transit over a communications network."); GOOG-1003, ¶392.

6. Claim 11

[11.0] *The method as recited in claim 9, wherein said displaying a confirmation in the mobile device that the balance in the e-purse has been reduced by the total amount comprises: sending a notification of successful payment to the merchant of the POS device.*

As described above with respect to [1.11], a POSITA would have been motivated to modify Moshal to incorporate the conventional features of an e-wallet having an updatable balance in which the mobile device receives notification of a balance reduction when a payment is successful, as disclosed by Jogu. GOOG-1003, ¶393. Further, Moshal discloses that when payment is successful (step 726 in Fig. 7), the payment gateway sends a notification of successful payment to the merchant of the POS device (steps 734-738). GOOG-1005, ¶¶56-57; GOOG-1003, ¶393.

GOOG-1005, Fig. 7 (annotated); GOOG-1003, ¶393

XII. CONCLUSION

Petitioner asks that the Board order a post-grant review trial for claims 1-17, and then cancel these claims unpatentable.

Respectfully submitted,

Dated: <u>December 23, 2020</u>   <u>/Andrew S. Ehmke/</u>

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), Petitioner hereby certifies, in accordance with and reliance on the word count provided by the word-processing system used to prepare this petition, that the number of words in this paper is 18,661. Pursuant to 37 C.F.R. §42.24(d), this word count excludes the table of contents, table of authorities, mandatory notices under §42.8, certificate of service, certificate of word count, appendix of exhibits, and any claim listing.

Dated: December 23, 2020

/Andrew S. Ehmke/

Andrew S. Ehmke
Lead Counsel for Petitioner
Registration No. 50,271

CERTIFICATE OF SERVICE

The undersigned certifies that, in accordance with 37 C.F.R. § 42.6(e) and

37 C.F.R. § 42.105, service was made on Patent Owner as detailed below.

Date of service   December 23, 2020

Manner of service   FEDERAL EXPRESS

Documents served
- Petition for Post Grant Review
  of U.S. Patent No. 10,600,046
- Certificate of Word Count
- Petitioner's Exhibit List
- Exhibits GOOG-1001 through GOOG-1022; GOOG-1024 through GOOG1037; and GOOG-1039 through GOOG-1045

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