UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR § 1.53(b))

Attorney Docket No.	104402-5035-US
First Inventor	Paresh K. Patel
Title	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS
Electronically filed	January 23, 2018

APPLICATION ELEMENTS

See MPEP Chapter 600 concerning utility patent application contents.

Address to: **Commissioner for Patents**
P.O. Box 1450
Alexandria, VA 22313-1450

1. ☐ Fee Transmittal Form *(with duplicate for fee processing)*
2. ☒ Applicant claims Small Entity status, see 37 C.F.R. § 1.27
3. ☒ Specification [Total Pages 71]
4. ☒ Drawing(s) *(35 USC § 113)* [Total Sheets 45]
5. ☒ Oath or Declaration [Total Pages 1]
   a. ☐ Newly executed *(original or copy)*
   b. ☒ Copy from a prior application *(37 CFR § 1.63(d))*
6. ☒ Application Data Sheet, see 37 C.F.R. § 1.76
7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program *(Appendix)*
   ☐ Landscape Table on CD
8. ☐ Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
   a. ☐ Computer Readable Form (CRF)
   b. ☐ Specification Sequence Listing on
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ Paper
   c. ☐ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. ☐ Assignment Papers *(cover sheet & document(s))*
   Name of Assignee:
10. ☒ 37 CFR § 3.73(c) Statement
    a. ☒ Power of Attorney
11. ☐ English Translation Document *(if applicable)*
12. ☐ Information Disclosure Statement and PTO-1449
    a. ☐ Copies of citations attached
13. ☐ Preliminary Amendment
14. ☐ Return Receipt Postcard *(MPEP 503)*
15. ☐ Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
16. ☐ Non-Publication Request under 35 U.S.C. § 122 (b)(2)(B)(i)
17. ☐ Other:

Note: (1) Benefit claims under 37 CFR 1.78 and foreign priority claims under 1.55 **MUST** be included in an Application Data Sheet (ADS).

(2) For applications filed under 35 U.S.C. 111, the application must contain an ADS specifying the applicant if the applicant is an assignee, person to whom the inventor is under an obligation to assign, or person who otherwise shows sufficient proprietary interest in the matter. See 37 CFR 1.46(b).

19. CORRESPONDENCE ADDRESS: Customer Number 24341

Signature	/Douglas J. Crisman/	Date	January 23, 2018
Name (Print/Type)	Douglas J. Crisman	Registration No. (Attorney/Agent)	39,951

DB2/ 20176675.7

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	104402-5035-US
	Application Number	
Title of Invention	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 — Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
Dr.	Paresh	K.	Patel	

Residence Information (Select One) ● US Residency Non US Residency Active US Military Service

City	State/Province	Country of Residence
Portland	OR	US

Mailing Address of Inventor:

Address 1	919 SW Taylor, Suite 500
Address 2	

City	State/Province	Postal Code	Country
Portland	OR	97205	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	24341		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS		
Attorney Docket Number	104402-5035-US	**Small Entity Status Claimed**	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	45	**Suggested Figure for Publication (if any)**	

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	104402-5035-US
	Application Number	
Title of Invention	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	● Customer Number	US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	24341		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	14458192	2014-08-12

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	104402-5035-US
	Application Number	
Title of Invention	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS	

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
14458192	Continuation in part of	14456683	2014-08-11	9256873	2016-02-09
Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
14456683	Continuation of	14335762	2014-07-18	9547859	2017-01-17
Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
14335762	Continuation of	14214644	2014-03-14	8856045	2014-10-07
Prior Application Status	Expired				Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
14214644	Claims benefit of provisional	61917936	2013-12-18		
Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
14214644	Continuation in part of	29477025	2013-12-18	D755183	2016-05-03
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.					Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	104402-5035-US
		Application Number	
Title of Invention	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS		

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	104402-5035-US
	Application Number	
Title of Invention	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	104402-5035-US
	Application Number	
Title of Invention	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1 — Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

● Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.	Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name	Payrange Inc.

Mailing Address Information For Applicant:

Address 1	919 SW Taylor, Suite 500		
Address 2			
City	Portland	**State/Province**	OR
Country	US	Postal Code	97205
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button. Add

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	104402-5035-US
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Title of Invention	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

Remove

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Douglas J. Crisman/			Date (YYYY-MM-DD)	2018-01-23
First Name	Douglas J.	Last Name	Crisman	Registration Number	39951

Additional Signature may be generated within this form by selecting the Add button. Add

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	104402-5035-US
	Application Number	
Title of Invention	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3 A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent CooperationTreaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	**METHOD AND SYSTEM FOR RETROFITTING AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS**

As the below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application, or

☒ United States application or PCT international application number 14/458,192 filed on August 12, 2014

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby state that I have reviewed and understand the contents of the above identified application, including the claims.

I acknowledge the duty to disclose information known to me to be material to patentability as defined by 37 CFR 1.56.

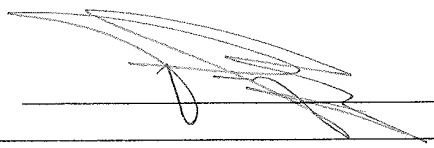
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: **Dr. Paresh K. Patel** Date: 10/16/2014

Signature: 

CSC ServiceWorks – Ex. 1002
Page 11 of 367

Electronically filed January 23, 2018

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:	Paresh K. Patel	Confirmation No.:	To be assigned
Serial No.:	To be assigned	Art Unit	To be assigned
Filed:	January 23, 2018	Examiner:	To be assigned
For:	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS	Attorney Docket No.:	104402-5035-US

STATEMENT UNDER 37 C.F.R. § 3.73(c)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

PAYRANGE INC., a corporation, states that it is the assignee of the entire right, title and interest in the patent application identified above by virtue of an assignment from the inventor of the parent of the patent application identified above.

The assignment was recorded in the United States Patent and Trademark Office on November 21, 2014 at Reel 034236, Frame 0378, or for which a copy thereof is attached.

The undersigned is authorized to act on behalf of the assignee.

Date: January 23, 2018

/Douglas J. Crisman/ 39,951
Douglas J. Crisman (Reg. No.)
MORGAN, LEWIS & BOCKIUS LLP
1400 Page Mill Road
Palo Alto, CA 94304
(650) 843-4000

DB2/ 23585356.3

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint the practitioners of Morgan, Lewis & Bockius LLP, Customer Number **24341** as attorneys or agents to represent the undersigned and to transact all business before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications and patents assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 C.F.R. § 3.73(c), said appointment to be to the exclusion of the inventor(s) and their attorney(s) in accordance with the provisions of 37 C.F.R. § 3.71, provided that, if any one of these attorneys ceases being affiliated with the law firm of Morgan, Lewis & Bockius LLP as partner, counsel, or employee, then the appointment of that attorney and all powers derived therefrom shall terminate on the date such attorney ceases being so affiliated.

Assignee Name and Address: PAYRANGE INC.
919 SW Taylor, Suite 500
Portland, OR 97205

SIGNATURE of Assignee of Record

The undersigned whose signature and title is supplied below is authorized to act on behalf of the assignee.

Signature _____

Name Paresh K. Patel, Ph.D., MBA Date December 16, 2016

Title CEO, PayRange Inc. Telephone (855) 856-6398

A copy of this form, together with a statement under 37 C.F.R. § 3.73(c) (Form PTO/SB96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 C.F.R. § 3.73(c) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee and must identify the application in which this Power of Attorney is to be filed.

DB2/ 23862800.1

METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS

[0001] The present application is a continuation of U.S. Patent Application No. 14/458,192, filed August 12, 2014, now U.S. Patent No. 9875473, which is a continuation-in-part of U.S. Patent Application Number 14/456,683, filed August 11, 2014, now U.S. Patent No. 9256873, which is a continuation of U.S. Patent Application Number 14/335,762, filed July 18, 2014, now U.S. Patent No. 9547859, which is a continuation of U.S. Patent Application Number 14/214,644, filed March 14, 2014, now U.S. Patent No. 8856045, which claims priority to U.S. Provisional Patent Application Number 61/917,936, filed December 18, 2013. U.S. Patent Application Number 14/214,644, filed March 14, 2014 is also a continuation-in-part of U.S. Design Patent Application Number 29/477,025, filed December 18, 2013, now U.S. Design Patent No. D755183. The present application is based on and claims priority from these applications, the disclosures of which are hereby expressly incorporated herein by reference.

FIELD OF THE INVENTION

[0002] The present application relates to the field of payment processing systems, and in particular, to a mobile-device-to-machine payment processing system over a non-persistent network connection.

BACKGROUND OF THE INVENTION

[0003] Vending machines (or "automatic retailing" machines), in the broadest sense, have been around for thousands of years. The first simple mechanical coin operated vending machines were introduced in the 1880s. Modern vending machines stock many different types of products including, but not limited to drinks (e.g., water, juice, coffee, and soda) and edible food products/items (e.g., snacks, candy, fruit, and frozen meals), as well as a wide variety of non-food items. In this fast paced world, vending machines are ubiquitous.

[0004] Vending machines are one type of "payment accepting unit" (payment accepting units are also referred to herein generically as "machines"). A payment accepting unit (or machine) is equipment that requires payment for the dispensing of products and/or services. In addition to vending machines, payment accepting units can also be other

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machines that require payment for the dispensing of a product and/or services including, but not limited to parking meters, toll booths, laundromat washers and dryers, arcade games, kiosks, photo booths, toll booths, transit ticket dispensing machines, and other known or yet to be discovered payment accepting units.

[0005] In using a payment accepting unit, a user will (1) approach the payment accepting unit, (2) determine from the face of the payment accepting unit the product (or service) he/she desires, (3) insert payment (e.g., coins, bills, or payment cards), and (4) input his/her selection into the payment accepting unit using a user interface (e.g., a series of buttons, a key pad, touch screen, or other input mechanism using, for example, the column and row at which a product is located). Based on the user's inputted selection, technology within the payment accepting unit provides the desired product (or service) to the user.

[0006] As the number of people with Internet-connected mobile devices proliferates, so does the variety of uses for such devices. Mobile payment is a logical extension. There is a large development effort around bringing mobile payment to the retail sector in an effort to not only provide options to the user, but also increased convenience.

SUMMARY

[0007] Disclosed herein is a payment processing system or, more specifically, a mobile-device-to-machine payment processing system over a non-persistent network connection with hands-free mode and manual mode (sometimes also herein called "swipe" or "swipe-to-pay" mode).

[0008] In some implementations, a method of presenting representations of payment accepting unit events is performed at a device (e.g., the mobile device 150, Figures 5 and 21) with one or more processors, memory, one or more output devices, and two or more communication capabilities. After sending a request to a payment module (e.g., the adapter module 100, Figures 5 and 20), via a first communication capability (e.g., a short-range communication technology/protocol such as BLE), to initiate a transaction with a payment accepting unit (e.g., the payment accepting unit 120, Figures 5 and 19) (sometimes also herein called "machine 120") associated with the payment module, the method includes obtaining a notification from the payment module via the first communication capability, where the notification indicates an event at the payment accepting unit associated with the payment module. In response to obtaining the notification, the method includes providing a representation of the notification to a user of the mobile device via the one or more output

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devices of the mobile device (e.g., a message displayed on a display of the mobile device, a vibration produced by a vibration mechanism of the mobile device, an aural alert produced by a speaker of the mobile device, and/or the like).

[0009] In some implementations, a method of retrofitting an offline-payment operated machine to accept electronic payments is performed at a payment module (e.g., the adapter module 100, Figures 5 and 20) with one or more processors, memory, a short-range communication capability (e.g., a short-range communication technology/protocol such as BLE), and a first interface module configured to couple the payment module with a control unit of an offline-payment operated machine (e.g., the payment accepting unit 120, Figures 5 and 19) (sometimes also herein called "machine 120"). The method includes receiving a transaction request via the short-range communication capability from a respective mobile device to perform a transaction with the offline-payment operated machine. The method includes validating the transaction request, where validation of the transaction request indicates that the respective mobile device is authorized to initiate payment for the transaction by a remote server (e.g., the server 130, Figures 5 and 22) via the long-range communication capability (e.g., the long-range communication technology/protocol such as GSM, CDMA, or Wi-Fi). In accordance with a determination that the transaction request is valid, the method includes causing the offline-payment operated machine to perform the requested transaction by issuing a signal to perform the transaction to the control unit of the offline-payment operated machine via the first interface module.

[0010] In some implementations, a device (e.g., the machine 120, (Figures 5 and 19), the adapter module 100 (Figures 5 and 20), the mobile device 150 (Figures 5 and 21), the server 130 (Figures 5 and 22), or a combination thereof) includes one or more processors and memory storing one or more programs for execution by the one or more processors, the one or more programs include instructions for performing, or controlling performance of, the operations of any of the methods described herein. In some implementations, a non-transitory computer readable storage medium storing one or more programs, the one or more programs comprising instructions, which, when executed by a device (e.g., the machine 120, (Figures 5 and 19), the adapter module 100 (Figures 5 and 20), the mobile device 150 (Figures 5 and 21), the server 130 (Figures 5 and 22), or a combination thereof) with one or more processors, cause the computer system to perform, or control performance of, the operations of any of the methods described herein. In some implementations, a device (e.g., the machine 120, (Figures 5 and 19), the adapter module 100 (Figures 5 and 20), the mobile device 150

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(Figures 5 and 21), the server 130 (Figures 5 and 22), or a combination thereof) includes means for performing, or controlling performance of, the operations of any of the methods described herein.

[0011] The subject matter described herein is particularly pointed out and distinctly claimed in the concluding portion of this specification. Objectives, features, combinations, and advantages described and implied herein will be more readily understood upon consideration of the following detailed description of the invention, taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] Figure 1 is a schematic diagram that shows three zones: a "communication zone" (e.g., Bluetooth range), an "authorization zone," and a "payment zone" in accordance with some implementations.

[0013] Figure 2 is a schematic diagram that shows the three zones of Figure 1 with multiple users therein in accordance with some implementations.

[0014] Figure 3 is a table that illustrates the hands-free credit or alert user principle in accordance with some implementations.

[0015] Figure 4 is a flow chart showing the logging received signal strength indicator (RSSI) information in accordance with some implementations.

[0016] Figure 5 is a block schematic that shows elements of the payment processing system including, but not limited to, the adapter module, the machine, the mobile device, and servers, as well as communications therebetween in accordance with some implementations.

[0017] Figure 6 is a block schematic that shows three areas of encryption used (each is bi-directional) between the adapter module, the machine, the mobile device, and/or servers in accordance with some implementations.

[0018] Figure 7 is a block diagram that shows communications, messaging, vending sequence, and purchase flow between the adapter module, the mobile device, and a system management server in accordance with some implementations.

[0019] Figure 8A is a schematic process flow diagram that shows additional elements and features of the payment processing system (e.g., communications, messaging, vending

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sequence, and purchase flow) when the user enters the "communication zone" (e.g., Bluetooth range) in accordance with some implementations.

[0020] Figure 8B is a schematic process flow diagram that shows additional elements and features of the payment processing system (e.g., communications, messaging, vending sequence, and purchase flow) when the user enters the "authorization zone" in accordance with some implementations.

[0021] Figure 8C is a schematic process flow diagram that shows additional elements and features of the payment processing system (e.g., communications, messaging, vending sequence, and purchase flow) when the user enters the "payment zone" and, in particular, detailing a hands-free mode embodiment and a swipe mode embodiment in accordance with some implementations.

[0022] Figure 8D is a schematic process flow diagram that shows additional elements and features of the payment processing system (e.g., communications, messaging, vending sequence, and purchase flow) in a vending transaction including a loop for multiple transactions in accordance with some implementations.

[0023] Figure 8E is a schematic process flow diagram that shows additional elements and features of the payment processing system (e.g., communications, messaging, vending sequence, and purchase flow) in the login mode in accordance with some implementations.

[0024] Figure 8F is a schematic process flow diagram that shows additional elements and features of the payment processing system (e.g., communications, messaging, vending sequence, and purchase flow) during boot-up of the adapter module in accordance with some implementations.

[0025] Figure 8G is a schematic process flow diagram that shows additional elements and features of the payment processing system (e.g., communications, messaging, vending sequence, and purchase flow) during an account check/update process in accordance with some implementations.

[0026] Figures 9A-9E are flow charts that show example steps and features of the payment processing system (e.g., communications, messaging, vending sequence, and purchase flow) in accordance with some implementations.

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[0027] Figures 10A-10D show a mobile device with a graphical representation of a mobile application shown thereon, the mobile application being used as part of the mobile-device-to-machine payment processing system in accordance with some implementations.

[0028] Figure 11 is a perspective view of the in-line dongle adapter module in accordance with some implementations.

[0029] Figure 12 is a front plan view of the in-line dongle adapter module of Figure 11 in accordance with some implementations.

[0030] Figure 13 is a back plan view of the in-line dongle adapter module of Figure 11 in accordance with some implementations.

[0031] Figure 14 is a side view of the in-line dongle adapter module of Figure 11 in accordance with some implementations.

[0032] Figure 15 is a first end view of a connector receptacle of the in-line dongle adapter module of Figure 11 in accordance with some implementations.

[0033] Figure 16 is a second end view of a connector receptacle of the in-line dongle adapter module of Figure 11 in accordance with some implementations.

[0034] Figure 17 is a perspective view taken from the first end of the in-line dongle adapter module of Figure 11, the connectors and cables between which the in-line dongle adapter module is inserted being shown in broken lines for illustrative purposes in accordance with some implementations.

[0035] Figure 18 is a perspective view taken from the second end of the in-line dongle adapter module of Figure 11, the connectors and cables between which the in-line dongle adapter module is inserted being shown in broken lines for illustrative purposes in accordance with some implementations.

[0036] Figure 19 is a perspective view of the in-line dongle adapter module of Figure 11 within a vending machine in accordance with some implementations.

[0037] Figure 20 is a block diagram of an adapter module in accordance with some implementations.

[0038] Figure 21 is a block diagram of a mobile device in accordance with some implementations.

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[0039] Figure 22 is a block diagram of a server in accordance with some implementations.

[0040] Figure 23 is a schematic flow diagram of a process for authenticating a user to perform a transaction in the payment processing system in accordance with some implementations.

[0041] Figure 24A is a block diagram of a packet of information broadcast by the payment module (sometimes also herein called the "adapter module") in accordance with some implementations.

[0042] Figure 24B is a block diagram of an authorization request in accordance with some implementations.

[0043] Figure 24C is a block diagram of an authorization grant token in accordance with some implementations.

[0044] Figure 24D is a block diagram of transaction information generated by the payment module in accordance with some implementations.

[0045] Figure 25A illustrates a schematic flow diagram of a process for providing a representation of a machine event at a mobile device in accordance with some implementations

[0046] Figure 25B is a schematic flow diagram of a process for processing acknowledgment information in the payment processing system in accordance with some implementations.

[0047] Figures 26A-26D illustrate example user interfaces for providing a representation of a machine event at a mobile device in accordance with some implementations.

[0048] Figures 27A-27B illustrate a flowchart diagram of a method of presenting representations of payment accepting unit events in accordance with some implementations.

[0049] Figure 28A illustrates a block diagram of an offline-payment operated machine in accordance with some implementations.

[0050] Figure 28B illustrates signals sampled by the payment module in accordance with some implementations.

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[0051] Figures 29A-29B illustrate a flowchart diagram of a method 1600 of retrofitting an offline-payment operated machine to accept electronic payments in accordance with some implementations.

[0052] Figure 30 illustrates a flowchart diagram of a method of enabling a payment operated machine to accept electronic payments in accordance with some implementations.

[0053] Like reference numerals refer to corresponding parts throughout the several views of the drawings.

DETAILED DESCRIPTION OF THE INVENTION

[0054] Disclosed herein is a payment processing system or, more specifically, a mobile-device-to-machine payment processing system for processing transactions over a non-persistent network connection. The mobile-device-to-machine payment processing system disclosed herein focuses on the unattended retail space (e.g., a payment accepting unit 120, sometimes also herein called a "machine 120"). More specifically, the mobile-device-to-machine payment processing system disclosed herein allows a user (having a mobile device 150 with a mobile application 140 thereon) to make a cashless purchase from a payment accepting unit 120 (having an adapter module 100 associated therewith).

[0055] The mobile-device-to-machine payment processing system described herein can be implemented with one or more of the following features: easy installation feature, a non-persistent network connection feature; a manual (swipe to pay) mode feature; a hands-free mode feature; and a multiple vending transactions (multi-vend) feature.

[0056] Easy Installation: Installation is very easy, requires no tools, requires no configuration, and takes as little as 30 seconds. This is accomplished by using an adapter module 100 (sometimes also herein called "payment module 100") such as an in-line dongle (a hardware device with software thereon) design for in-line insertion within a multi-drop bus (MDB) of a payment accepting unit 120 (e.g., a vending machine) (sometimes also herein called 'the machine 120"). Installation is as simple as "powering down" (turning off) the machine 120, identifying the "wire" that connects with a payment receiving mechanism (e.g., the coin mechanism), disconnecting the wire (so that there are two loose ends, such as a male connection end or adapter of an MDB and a female connection end or adapter of an MDB), plugging (inserting) the adapter module 100 in serial ("in-line") with the wire (e.g., connecting the MDB female adapter to a male adapter of the adapter module 100 and connecting the MDB male adapter to a female adapter of the adapter module 100), tucking

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the wire and the installed adapter module 100 back into position, and "powering up" (turning on) the machine 120. Most vending machines made since 1995 have this industry standard MDB technology that would allow this easy 30-second installation. On machines without MDB technology, the adapter module 100 can be configured or designed to work with other serial protocols or activate a switch. In essence the adapter module 100 simulates establishing payment on payment accepting unit 120 in much the same manner as other alternative forms of payment (e.g., cash).

[0057] Non-persistent Network Connection: Although payment accepting units (or "machines") that accept only cash (e.g., paper currency and coins) may not require a connection (persistent or non-persistent) to a network, traditional payment accepting units that accept cashless payments (e.g., credit cards, debit cards, and alternative mobile device payment methods using, for example, smart phones) require a persistent connection to a network (wired or wireless) to facilitate the cashless payments. In other words, without a persistent (ongoing or accessible on demand) network connection, traditional payment accepting units cannot accept cashless payments. Most traditional payment accepting units that accept cashless payments include the technology to accomplish this persistent network connection that allows them to connect to a remote server. If the network connection to a traditional machine is temporarily interrupted, cashless payments will be temporarily unavailable. If the machine is located in a location where no network connection is available, cashless payments is not possible. In addition to using a mobile device 150 as an intermediary between the payment accepting units 120 and the server 130, the mobile-device-to-machine payment processing system described herein minimizes (i.e., the manual mode) or eliminates (i.e., the hands-free mode) user interaction with the mobile device 150. Further, in some implementations, the mobile-device-to-machine payment processing system described herein facilitates the acceptance of cashless payments without requiring any network connection near the payment accepting unit 120. In some implementations, when the mobile-device-to-machine payment processing system described herein is located in a remote location where network connection is unavailable, the mobile-device-to-machine payment processing system, therefore, can still accept cashless payments.

[0058] Manual (Swipe-to-Pay) Mode: Using a "swipe-to-pay" feature (or just "swipe") refers to a user's action implemented on his/her mobile device 150 where he/she quickly brushes his/her finger (or other pre-determined interaction) on the mobile device's touch screen 152 (Figures 10A-10D) or other input devices associated with the mobile device

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150. From the user's perspective, when the user is within range, a pre-installed mobile application 140 automatically connects to the payment accepting unit 120 (e.g., a vending machine). The mobile application 140 might display (on the touch screen 152) a prepaid balance that the user "swipes" to transfer payment to the payment accepting unit 120. The user could observe the transferred funds on the touch screen 152 of the mobile device 150 and/or on the display 122, 124 (Figure 19) of the payment accepting unit 120. The transaction is completed just as if cash was inserted in the machine 120 with the user inputting his selection on the payment accepting unit 120 and the payment accepting unit 120 dispensing the product or service. After the selection is made, the change is returned to the mobile device 150 and this may be shown on the touch screen 152 of the mobile device 150.

[0059] Hands-Free Mode: A "hands-free pay" feature (or just "hands-free") would most likely be used with "favorite" payment accepting units 120 (e.g., a frequently used vending machine at a user's work or school). From the user's perspective, he/she would approach the favorite payment accepting unit 120 and notice that the display 122, 124 (Figure 19) of the payment accepting unit 120 shows funds available, he/she would select the product or service using the payment accepting unit's input mechanisms (e.g., buttons 126 or a touch screen display 124 shown in Figure 19), and he/she would retrieve dispensed services or products. It would be that simple. More specifically, when the user is within range, a pre-installed mobile application 140 automatically connects to the payment accepting unit 120 (e.g., a vending machine). The user may leave the mobile device 150 in a pocket, purse, briefcase, backpack, or other carrier. As the user approaches the payment accepting unit 120 and is in approximately "arm's-length" distance (e.g., 3 to 5 feet) of the payment accepting unit 120, the user could observe the transferred funds on the display 122, 124 (Figure 19) of the payment accepting unit 120. The transaction is completed just as if cash was inserted into the payment accepting unit 120 with the user inputting his/her selection on the payment accepting unit 120 and the payment accepting unit 120 dispensing the product or service. After the selection is made, the change is returned to the mobile device 150. Figure 3 details when the hands-free mode would be available.

[0060] Multiple Vending Transactions (Multi-Vend): Both the manual and hands-free modes could be used multiple times in sequence (implemented, for example, as a loop) so that a user may make multiple purchases. After making his/her first selection and receiving his product (or service), the user would observe that additional funds were available on the display 122, 124 (Figure 19) on the payment accepting unit 120. He/she could make another

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selection (or multiple selections) and receive additional product(s) (or service(s)). More specifically, the display 122, 124 (Figure 19) may reset as if the transaction is complete, but then, because the user is still standing in range, the mobile application 140 would send another credit to the payment accepting unit 120, allowing for a second purchase. When the user walks away, the system clears (e.g., returns unused funds to the application 140 on the mobile device 150).

[0061] The features described above, alone or in combination with other features described herein will revolutionize the hundred billion dollar automated retail industry. The hardware is very low cost and there are no reoccurring fees because no cellular connection is required on the machine 120. Using the mobile-device-to-machine payment processing system described herein, operators of machines 120 can increase frequency of visits by purchasers and items sold with each visit.

[0062] The mobile-device-to-machine payment processing system described herein may be implemented as an apparatus, system, and/or method for enabling payments to a machine 120 via a mobile device 150. The mobile-device-to-machine payment processing system may be better understood with reference to the drawings, but the shown mobile-device-to-machine payment processing system is not intended to be of a limiting nature.

DEFINITIONS

[0063] Before describing the mobile-device-to-machine payment processing system and the figures, some of the terminology should be clarified. Please note that the terms and phrases may have additional definitions and/or examples throughout the specification. Where otherwise not specifically defined, words, phrases, and acronyms are given their ordinary meaning in the art. The following paragraphs provide some of the definitions for terms and phrases used herein.

[0064] Adapter Module 100: As shown in Figures 1 and 2, the adapter module 100 (sometimes also herein called the "payment module 100") is a physical device that is installed in a machine 120 (a payment accepting unit 120). The shown adapter module 100 is an in-line dongle (a hardware device with software thereon) device that may be inserted in-line within a multi-drop bus (MDB) of a machine 120. The adapter module 100 bridges the communication between the machine 120 and a mobile device 150. Although described as a unique component, it should be noted that the adapter module 100 could be implemented as a plurality of devices or integrated into other devices (e.g., components of a machine 120). In

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its unique component form, the adapter module 100 can be easily inserted into a machine 120 so that the machine 120 is able to perform new features with the assistance of the adapter module 100. Figure 20 shows components associated with the adapter module 100. As shown in Figure 20, the communications unit 770 of the adapter module 100 includes short-range communication capability 776 (e.g., Bluetooth mechanisms).The shown example may be divided into multiple distinct components that are associated with each other or the example may be incorporated into or drawn from other technology (e.g., a computer or a payment accepting unit) as long as the components are associated with each other.

[0065] Mobile Device 150 and Application 140 (also referred to as a "mobile application," "mobile app," or "app"): In general, a mobile device 150 may be a user's personal mobile device 150. The mobile device 150 (with a mobile application 140 thereon) acts as a communication bridge between the adapter module 100 (associated with a payment accepting unit 120) and the server 130. The mobile device 150 and the application 140, however, are not "trusted" in that the communications (transmissions) it passes are encrypted. Encrypted (secured) communications are undecipherable (unencryptable, unreadable, and/or unuseable) by the mobile device 150. This keeps the communications passed between the adapter module 100 and the server 130 secured and safe from hacking. Mobile devices include, but are not limited to smart phones, tablet or laptop computers, or personal digital assistants (PDAs), smart cards, or other technology (e.g., a hardware-software combination) known or yet to be discovered that has structure and/or capabilities similar to the mobile devices described herein. The mobile device 150 preferably has an application (e.g., the application 140) running on it. The term "app" is used broadly to include any software program(s) capable of implementing the features described herein. Figures 10A-10D show user interfaces for the application 140 displayed by the mobile device 150. It should be noted that the phrase "mobile device" can be assumed to include the relevant app unless specifically stated otherwise. Similarly, it should be noted that an "app" can be assumed to be running on an associated mobile device unless specifically stated otherwise. Figure 21 shows components associated with the mobile device 150. The shown example may be divided into multiple distinct components that are associated with each other or the example may be incorporated into or drawn from other technology (e.g., the cell phone itself) as long as the components are associated with each other.

[0066] Payment accepting unit 120 (or Machine 120): A payment accepting unit 120 (or the machine 120) is equipment that requires payment for the dispensing of an product

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and/or service. Payment accepting units 120 may be vending machines, parking meters, toll booths, laundromat washers and dryers, arcade games, kiosks, photo booths, toll booths, transit ticket dispensing machines, and other known or yet to be discovered payment accepting units 120. Some payment accepting units 120 can accept cashless payments (payments other than cash (paper currency and coins)) by accepting payment from, for example, credit cards, debit cards, and mobile devices.

[0067] Network Connections: For purposes of this discussion, a persistent network connection is a wired or wireless communications connection that is ongoing (e.g., a dedicated connection, a dedicated online connection, and/or a hardwired connection) or accessible on demand (e.g., the ability for the machine to make a temporary connection to a server or the ability for the user to contact a server from his mobile device). Typically the persistent network connection has been conducted over "long-range communication technology" or "long-range communication protocol" (e.g., hardwired, telephone network technology, cellular technology (e.g., GSM, CDMA, or the like), Wi-Fi technology, wide area network (WAN), local area network (LAN), or any wired or wireless communication technology over the Internet that is known or yet to be discovered). Traditionally, machines that accept payment other than cash require a persistent (ongoing or accessible on demand) connection to a network to facilitate payment. This is true for machines that accept, for example, credit cards and debit cards. The payment accepting units 120 described herein do not require a traditional persistent network connection. The user's mobile device 150 acts as a communication bridge between the adapter module 100 and the server 130. Communications between user mobile devices 150 and the servers (e.g., a system management server 130 and/or a funding source server 160) take place using long-range communication technology. Communications between user mobile devices 150 and the adapter module 100 of the payment accepting unit 120 take place using "short-range communication technology" or "short-range communication protocol" (e.g., Bluetooth (such as Bluetooth 4.0, Bluetooth Smart, Bluetooth Low Energy (BLE)), near-field communication (NFC), Ultra Wideband (UWB), radio frequency identification (RFID), infrared wireless, induction wireless, or any wired or wireless technology that could be used to communicate a small distance (approximately a hundred feet or closer) that is known or yet to be discovered). Therefore, neither the adapter module 100 nor the payment accepting unit 120 requires a traditional persistent long-range wireless network connection. The communications technology shown in the figures may be replaced with alternative like communications technology and, therefore,

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specific shown communications technologies are not meant to be limiting. For example, Wi-Fi technology could be replaced with another long-range communication technology.

[0068] Server: A server is the host processing server that may be operated by the company running the payment processing system. For each user, the server 130 preferably maintains at least one "virtual wallet" having at least one "balance" (which can be $0) of designated funds for which the server 130 keeps an accounting. The balance may represent, for example, "cash" or it may be a "promotional value" that represents funds that may be spent under certain circumstances. If these funds begin to be depleted, the user may be notified (e.g., via the application 140 on the mobile device 150) that additional funds need to be designated and/or transferred. Alternatively, funds from other sources (e.g., the funding source server 160) may be automatically transferred to restore a predetermined balance. The balance may also be increased based on a promotion (e.g., points earned or coupons). As shown in Figure 22, the server includes appropriate processors 950, memory 960 (which would keep an accounting of the user's balance in a manner similar to a gift card), and communication systems 970. As shown in Figure 22, the communications unit 970 of the server 130 includes long-range communication capability 972 (e.g., cellular technology and/or Wi-Fi mechanisms). The server 130 also includes a security unit 955 for encrypting and decrypting messages. The server 130 receives an authorization request (sometimes also herein called an "AuthRequest") from the adapter module 100 (via a mobile device 150) and, if funds are available, returns an authorization grant (sometimes also herein called an "AuthGrant" or an "authorization grant token") for funds. Figure 22 shows components associated with the server 130. The shown example may be divided into multiple distinct components that are associated with each other or the example may be incorporated into or drawn from other technology (e.g., a computer or a main frame) as long as the components are associated with each other.

[0069] Advertise Presence: Each adapter module 100 advertises its presence by broadcasting signals (advertising broadcast signals) to mobile devices in the zones 102, 104, 106. Each adapter module 100 can listen to other adapter modules' advertisements.

[0070] Received Signal Strength Indicator (RSSI): The adapter module 100 may have a self-calibrating signal strength to determine zone thresholds (e.g., a payment zone threshold and an authentication zone threshold). At the time the user selects an item (product or service) from the payment accepting unit 120, the Received Signal Strength Indicator (RSSI) is logged. At this moment, it is presumed the user is within "arm's-length" (which may be a

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predetermined length approximating the distance of a user standing in front of a machine for the purpose of making a purchase) from the payment accepting unit 120. A mathematical computation (i.e., In-Range Heuristics) is conducted to derive the optimal RSSI threshold at which point payment should be triggered by an application 140 on a mobile device 150. The threshold may be payment accepting unit specific and can vary over a period of time. This optimal zone threshold is preferably reported to the mobile device 150 during an initial handshake.

[0071] In-Range Heuristics: A mathematical computation that determines the RSSI threshold to determine when a user is in the authorization zone 104 and/or the payment zone 102. This computation can take into consideration numerous historical data points as well as transaction specific information such as which the mobile device 150 is being used, payment accepting unit type, among other factors. Preferably the RSSI is logged while the user is making his selection (this is the one time in the entire process that the user definitely will be "in range" (e.g., they will be arm's length from the machine 120 because they are physically interacting with the machine 120). The type of user mobile device 150, accelerometer data (e.g., is the user moving or stationary), and/or other information may also be logged while the user is making his selection. The adapter module 100 can give a reference RSSI for the payment zone 102 for the machine 120, and the application 140 can make a +/- adjustment based on the specific mobile device 150 on which it is installed. Over a period of time, the payment processing system continues to improve itself based on additional data points.

[0072] Authorization Request ("AuthRequest:): When a user enters the authorization zone 104, the mobile device 150 notifies the adapter module 100 and the adapter module 100 sends a secured authorization request (e.g., the encrypted authorization request) as a "message" (also referred to as a communication or transmissions) to the server 130 via the mobile device 150. Encryption may be performed by a security unit 755 (Figure 20) with security technology (e.g., encryption and decryption means) that may be associated with the processing unit 750 and/or the memory 760. Significantly, the AuthRequest is a request for authorization of funds, not a request for authorization of a transaction. The purpose of the funds is irrelevant to the server 130.

[0073] Authorization Grant Token ("AuthGrant"): This is a "message" (also referred to as a communication or transmissions) encrypted by the security unit 955 (Figure 22) with security technology (e.g., encryption and decryption means) of the server 130 with the unique private key corresponding to the adapter module 100. The secured authorization grant (e.g.,

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the encrypted authorization grant) is passed from the server 130 to the adapter module 100 via the mobile device 150 in the form of a message. The mobile device 150, however, is not able to decrypt and/or read the message. The authorization grant is in response to the authorization request. The amount of the funds granted by the AuthGrant may be determined by factors including, but not limited to, the amount of funds available (or, if funds are not available, a mini-loan could be granted), a pre-authorized amount (e.g., set by the server, set by the user during set-up, set by the funding source, or a standard amount), limited by time (e.g., only a certain amount per hour, or a predetermined amount at specific times of the day), limited to the maximum amount of an item on the machine (or enough for two or three items in the machine), or one or more of these and other factors. Significantly, the AuthGrant makes the funds available, but does not authorize a transaction. The AuthGrant may have an associated expiration period in that it may expire if it is not used in a pre-determined time period. The length of time before the AuthGrant expires may be determined by factors including, but not limited to, the trustworthiness of the user (e.g., the user has a long history with the payment processing system or some known provider (e.g., credit card provider, bank, or credit union), the user has a good credit rating, or the user has a large wallet balance), a pre-authorized time period (e.g., set by the server, set by the user during set-up, set by the funding source, or a standard time period), limited by time (e.g., predetermined time periods at specific times of the day such as longer times during breakfast, lunch, and dinner), limited by the machine or the products or services sold in the machine, limited by the number of other users near the machine (e.g., if it is a crowded machine, the AuthGrant may expire faster), or one or more of these and other factors. The AuthGrant remains valid until it expires or some other event occurs to end its validity (e.g., the user cancels it). This means that under normal circumstances the mobile device 150 will hold the AuthGrant authorizing use of funds for a pre-determined time period that will allow the user sufficient time to make a purchase. The authorized amount may be considered to be the "wallet balance" that is held in a virtual "wallet."

[0074] Synchronization: Time may be synchronized to the adapter module 100 from the server 130. The server 130 sends time information with encrypted messages and the adapter module 100 uses the time encoded in the messages for synchronization.

[0075] The mobile-device-to-machine payment processing system and components thereof may have associated hardware, software, and/or firmware (a variation, subset, or hybrid of hardware and/or software). The term "hardware" includes at least one "processing

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unit," "processor," "computer," "programmable apparatus," and/or other known or yet to be discovered technology capable of executing instructions or steps (shown as the processing unit 750 in Figure 20, the processing unit 850 in Figure 21, and the processing unit 950 in Figure 22). The term "software" includes at least one "program," "subprogram," "series of instructions," or other known or yet to be discovered hardware instructions or hardware-readable program code. Software may be loaded onto hardware (or firmware) to produce a "machine," such that the software executes on the hardware to create structures for implementing the functions described herein. Further, the software may be loaded onto the hardware (or firmware) so as to direct the mobile-device-to-machine payment processing system (and components thereof) to function in a particular manner described herein or to perform a series of operational steps as described herein. "Hardware" such as the adapter module 100, the mobile device 150, and the payment accepting unit 120 may have software (e.g., programs and apps) loaded thereon. The phrase "loaded onto the hardware" also includes being loaded into memory (shown as the memory 760 in Figure 20, the memory 860 in Figure 21, and the memory 960 in Figure 22) associated with or accessible by the hardware. The term "memory" is defined to include any type of hardware (or other technology) -readable media (also referred to as computer-readable storage medium) including, but not limited to, attached storage media (e.g., hard disk drives, network disk drives, servers), internal storage media (e.g., RAM, ROM, EPROM, FLASH-EPROM, or any other memory chip or cartridge), removable storage media (e.g., CDs, DVDs, flash drives, memory cards, floppy disks, flexible disks), firmware, and/or other known or yet to be discovered storage media. Depending on its purpose, the memory may be transitory and/or non-transitory. Appropriate "messages," "communications," "signals," and/or "transmissions" (that includes various types of information and/or instructions including, but not limited to, data, commands, bits, symbols, voltages, currents, electromagnetic waves, magnetic fields or particles, optical fields or particles, and/or any combination thereof) over appropriate "communication paths," "transmission paths," and other means for signal transmission including any type of connection between two elements on the payment processing system (e.g., the adapter module 100, the mobile device 150, the payment accepting unit 120, hardware systems and subsystems, and memory) would be used as appropriate to facilitate controls and communications.

[0076] It should be noted that the terms "programs" and "subprograms" are defined as a series of instructions that may be implemented as software (i.e. computer program

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instructions or computer-readable program code) that may be loaded onto a computer to produce a "machine," such that the instructions that execute on the computer create structures for implementing the functions described herein or shown in the figures. Further, these programs and subprograms may be loaded onto a computer so that they can direct the computer to function in a particular manner, such that the instructions produce an article of manufacture including instruction structures that implement the function specified in the flow chart block or blocks. The programs and subprograms may also be loaded onto a computer to cause a series of operational steps to be performed on or by the computer to produce a computer implemented process such that the instructions that execute on the computer provide steps for implementing the functions specified in the flow chart block or blocks. The phrase "loaded onto a computer" also includes being loaded into the memory of the computer or a memory associated with or accessible by the computer. Separate, albeit interacting, programs and subprograms may be associated with the adapter modules 100, the server 130, and the mobile device 150 (including the mobile application 140) and these programs and subprograms may be divided into smaller subprograms to perform specific functions.

[0077] The terms "messages," "communications," "signals," and/or "transmissions" include various types of information and/or instructions including, but not limited to, data, commands, bits, symbols, voltages, currents, electromagnetic waves, magnetic fields or particles, optical fields or particles, and/or any combination thereof. Appropriate technology may be used to implement the "communications," "signals," and/or "transmissions" including, for example, transmitters, receivers, and transceivers. "Communications," "signals," and/or "transmissions" described herein would use appropriate technology for their intended purpose. For example, hard-wired communications (e.g., wired serial communications) would use technology appropriate for hard-wired communications, short-range communications (e.g., Bluetooth) would use technology appropriate for close communications, and long-range communications (e.g., GSM, CDMA, Wi-Fi, or the like) would use technology appropriate for remote communications over a distance. Appropriate security (e.g., SSL or TLS) for each type of communication is included herein. The security units 755 and 955 include technology for securing messages. The security technology may be, for example, encryption/decryption technology (e.g., software or hardware). Although encryption/decryption is discussed primarily as being performed using a unique private key, alternative strategies include, but are not limited to encryption/decryption performed using public/private keys (i.e., asymmetric cryptography), or other encryption/decryption strategies

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known or yet to be discovered. Appropriate input mechanisms and/or output mechanisms, even if not specifically described, are considered to be part of the technology described herein. The communications unit 770 (shown in Figure 20) of the adapter module 100 is shown as including appropriate input and output mechanisms 772, 774 that may be implemented in association (e.g., directly or indirectly in functional communication) with male and female adapters 720, 730 of the adapter module 100. The communications unit 870 (shown in Figure 21) of the mobile device 150 includes mechanisms for both long-range communications (shown as the long-range communication capability 872 such as cellular and/or Wi-Fi mechanisms) for communicating with the server 130 and short-range communications (shown as the short-range communication capability 876 such as Bluetooth mechanisms) for communicating with the adapter module 100.

[0078] When used in relation to "communications," "signals," and/or "transmissions," the terms "provide" and "providing" (and variations thereof) are meant to include standard means of provision including "transmit" and "transmitting," but can also be used for non-traditional provisions as long as the "communications," "signals," and/or "transmissions" are "received" (that can also mean obtained). The terms "transmit" and "transmitting" (and variations thereof) are meant to include standard means of transmission, but can also be used for non-traditional transmissions as long as the "communications," "signals," and/or "transmissions" are "sent." The terms "receive" and "receiving" (and variations thereof) are meant to include standard means of reception, but can also be used for non-traditional methods of obtaining as long as the "communications," "signals," and/or "transmissions" are "obtained."

[0079] The term "associated" is defined to mean integral or original, retrofitted, attached, connected (including functionally connected), positioned near, and/or accessible by. For example, if the user interface (e.g., a traditional display 122 (Figure 19), a touch screen display 124 (Figure 19), a key pad 126 (Figure 19), buttons 126 (Figure 19, shown as part of the key pad 126), a keyboard (not shown), and/or other input or output mechanism) is associated with a payment accepting unit 120, the user interface may be original to the payment accepting unit 120, retrofitted into the payment accepting unit 120, attached to the payment accepting unit 120, and/or a nearby the payment accepting unit 120. Similarly, adapter modules 100 may be associated with payment accepting units 120 in that the adapter modules 100 may be original to the payment accepting unit 120, retrofitted into the payment

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accepting unit 120, attached to the payment accepting unit 120, and/or a nearby the payment accepting unit 120.

SYSTEM OVERVIEW

[0080] Figures 5, 6, and 7 together show major components of the mobile-device-to-machine payment system and the interactions there-between.

[0081] As shown, the adapter module 100 functionally connected bi-directionally to the payment accepting unit 120 via a wired serial connection such that no security is necessary. The adapter module 100 is also functionally connected bi-directionally to the mobile device 150 (and its installed mobile application 140) via short-range communication technology (e.g., a Bluetooth connection). Because the mobile device 150 is not a "trusted" link (e.g., it could be hacked by a user), only secured communications (transmissions) are passed between the adapter module 100 and the mobile device 150. This keeps communications secured and safe from hacking. The mobile device 150 (and its installed mobile application 140) is also functionally connected bi-directionally to a system management server 130 and/or a funding source server 160 via long-range communication technology (e.g., Wi-Fi or Cellular connection) that preferably has appropriate security (e.g., SSL security). Security between the mobile device 150 and the system management server 130 has the advantage of protecting communications from the mobile device 150 to the system management server 130 that may include sensitive data and may not be encrypted. The system management server 130 and the funding source server 160 may be connected via a wired Internet connection with SSL security. The system management server 130 may be connected via a wired Internet connection with SSL security to an operators' server 170. Although not necessary to implement a purchase transaction, for other purposes (e.g., inventory), the operators' server 170 may be connected to the payment accepting unit 120 using a handheld computer sync or a cellular connection.

[0082] Also, a unique private key may be used to securely transmit encrypted messages between the adapter module 100 and the system management server 130 (although the encrypted transmissions would most likely be routed through the mobile device 150). The server 130 stores a private key for each adapter module 100, and this key is only known to the adapter module 100 and the server 130. No intermediary is privy to this key (especially not the mobile device 150). When the adapter module 100 and the server 130 communicate messages (e.g., AuthRequest and AuthGrant), the security unit 755 of the adapter module 100

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encrypts the message with its private key and passes the message to the mobile device 150. The mobile device 150 (which preferably cannot decrypt the message) passes the encrypted message to the server 130. The server 130 is able to decrypt the message using the security unit 955 of the adapter module 100 and the unique private key. The security unit 955 of the server 130 uses this same unique private key to encrypt messages to the adapter module 100 and sends the message to the mobile device 150 to relay to the adapter module 100 that is able to decrypt the message using the security unit 755 of the adapter module 100 and the unique private key.

[0083] Figure 7 shows specific communications and messaging with a vending sequence (the numbers to the left of the communications and messaging) between the adapter module 100, the mobile device 150, and the system management server 130. These communications are discussed in more detail in the discussion pertaining to the schematic flow diagrams (Figures 8A-8G) and the flow charts (Figures 9A-9E).

[0084] It should be noted that Figures 5, 6, and 7 are examples, and are meant to help in the understanding of the mobile-device-to-machine payment system. For example, the shown long-range communications technology may be replaced with alternative long-range communications technology known or yet to be discovered, the shown short-range communication technology may be replaced with alternative short-range communication technology known or yet to be discovered, and the shown security may be replaced with alternative security known or yet to be discovered. The shown connections are meant to be examples, and there may be intermediaries that are not shown. The shown components have been simplified in that, for example, only one mobile device 150 (or machine 120, adapter module 100, or server 130) is shown where many may be included. Finally, the order of the steps may be changed and some steps may be eliminated.

ADAPTER MODULE

[0085] Figures 11-18 show views of adapter module 100a (referred to generally as adapter module 100). Adapter module 100 is a relatively low cost hardware component that is pre-configured to work with the industry standard multi-drop bus (MDB). On machines without MDB technology, the adapter module 100 can be configured or designed to work with other serial protocols or activate a switch. In essence the adapter module 100 simulates establishing payment on payment accepting unit 120 in much the same manner as other alternative forms of payment (e.g., cash).

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[0086] The shown adapter modules 100 are preferably designed to be used as an in-line dongle for in-line insertion within, for example, a MDB of a machine 120. The wire used in MDB technology uses male and female connection ends or adapters to allow the attachment of peripherals. In the case of a vending machine, the wire with the connection ends or adapters would be present to allow the attachment of a payment receiving mechanism (e.g., a coin mechanism). The MDB male and female adapters 700, 710 may be separated (as shown in Figures 17-18). The adapter module 100a in Figures 11 and 17-18 has a male adapter 720 and a female adapter 730. The adapter module 100a may be plugged (inserted) in serial ("in-line") with the wire. For example, the MDB female adapter 710 may be connected to the male adapter 720 of the adapter module 100 and the MDB male adapter 700 may be connected to the female adapter 730 of the adapter module 100. The resulting in-line configuration is shown in Figure 19. It should be noted that the adapter modules 100 are designed to allow pass-through communications so that if the mobile-device-to-machine payment processing system is not enabled (e.g., for a particular purchase or simply turned off) the MDB functions as though the adapter module 100 is not there and the machine 120 can function normally.

HANDS-FREE MODE

[0087] Summarily, if it is available, a hands-free mode, from the user's perspective, would allow the user to approach a favorite payment accepting unit 120 and notice that the display (e.g., the displays 122 or 124 shown in Figure 19) associated with the payment accepting unit 120 shows funds available (e.g., the wallet balance), he would select the product or service using input mechanisms (e.g., buttons 126 or a touch screen display 124 shown in Figure 19) associated with the payment accepting unit 120, and he would retrieve his dispensed services or products.

[0088] During an initial handshake with the mobile device 150 (when the user is within range), the adapter module 100 reports to the mobile device 150 whether or not hands-free mode is available. If it is available, the installed mobile application 140 automatically connects to the payment accepting unit 120 without the user having to interact with the mobile device 150. The user observes that funds are available on the display 122, 124 of the payment accepting unit 120 and completes the purchase transaction as if cash was inserted in the machine 120 by inputting his selection on the payment accepting unit 120. The payment

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accepting unit 120 dispenses the product or service. After the selection is made, the change is returned to the mobile device 150.

[0089] Whether hands-free payment is available is determined by factors including, but not limited to whether if other mobile devices 150 are in range, if other adapter modules 100 are in range, if there are any alerts, if the payment trigger threshold is having wide variances and so deemed unstable, or if the payment accepting unit operator (e.g., a vending machine operator) has opted to disable hands-free mode for the payment accepting unit 120. In the latter instance, operators can disable via a maintenance mobile device 150, as well as through the operators' server 170 and/or the system management server 130.

[0090] Figure 3 is a table that shows considerations, conditions, or factors that may be used to determine whether the hands-free pay feature is available. Starting at the "Favorite?" column, this indicates whether the payment accepting unit 120 is a favorite machine. Preferably the hands-free pay feature is only available for use with "favorite" payment accepting units 120 (e.g., a vending machine at work or school). The "Alert" column has to do with whether there is some reason (e.g., there are too many users in range) that the hands-free pay feature should not work and, if there is such a reason, the user will be notified (alerted) and may be able to use the manual mode to resolve the alert and/or complete the transaction. Figure 3 shows situations in which a user is or is not able to make hands-free purchases from a machine 120 using a mobile application 140 on his mobile device 150. It should be noted that the shown interface is an example. For example, some of the features could be automated or pre-selected. (It should be noted that the left hand column, the "Tab" column, relates to whether the selected tab on the mobile application 140 is "all" or "favorite." Figures 10A-10D all show these tabs. Unlike the other columns in Figure 3, this column has more to do with the functionality and view of the application 140 than specifically with the hands-free feature. The tabs would allow a user to select whether he wanted to be alerted when he was in range of all payment accepting units 120 or just "favorite" payment accepting units 120 and the application 140 would show the appropriate view.)

[0091] Balance Display: An optional feature of the mobile-device-to-machine payment system that is particularly helpful in the hands-free mode (although it may be available in the manual mode and/or in a multiple-vend scenarios) is when the user's mobile device 150 sends "credit" to the payment accepting unit 120 (either via hands-free payment or through a manual swipe), the wallet balance is sent to the payment accepting unit 120 that

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is then displayed to the user on a display 122, 124 of the machine 120. This is particularly beneficial during hands-free mode when the user does not retrieve the mobile device 150 and, therefore, may not know the balance. Also, in a multiple-vend scenario the user would not have to calculate a remaining balance.

[0092] An example of a hands-free, multiple-vend scenario where a balance is displayed by the payment accepting unit 120, follows: The user has $5.00 in his/her virtual wallet as that is the amount that has been authorized (the AuthGrant being stored on the mobile device 150). The user walks up to the payment accepting unit 120 and $5.00 is displayed on the display 122, 124 of the payment accepting unit 120 since hands-free mode was enabled and credit was sent (e.g., via the short-range communication capability) to the payment accepting unit 120. The user makes a selection of $1.50 by interacting (e.g., pressing buttons) with the machine 120. The item (product or service) is dispensed and the "change" is "returned" (e.g., via the short-range communication capability) to the virtual wallet. But since the user is still standing in the payment zone 102, the remaining wallet balance of $3.50 is sent to the payment accepting unit 120 and displayed so that the user can now see that he/she has a $3.50 balance. (It should be noted that the authorized funds may remain on the machine 120 and not be transferred back to the mobile device 150 between transactions.) The user decides to purchase a $1.50 item, and the transaction is completed as usual (e.g., by interacting with the machine 120). Now the user is still standing in the payment zone 102 and he/she sees the wallet balance of $2.00 on the display 122, 124 of the payment accepting unit 120. The user decides that he/she does not wish to purchase anything else and simply walks away. As he/she walks out of the payment zone 102, the credit is cleared from the machine 120, but he/she is left with the knowledge that his wallet balance is $2.00 even though he/she never touched the mobile device 150. Communications between the payment accepting unit 120 and the adapter module 100 (via the mobile device 150) handle the accounting incidental to the transaction. The remaining balance ($2.00) is technically stored on the server 130, and may be reflected on the application 140 on the mobile device 150.

MULTIPLE DISTINCT ZONES

[0093] As shown in Figures 1-2, the functions performed by the adapter module 100 can be divided into distinct zones: a first "communication zone" (e.g., "Bluetooth range" 106), a second "authorization zone" 104, and a third "payment zone" 102. The payment zone 102 is smaller than or equal to (overlapping completely) the authorization zone 104. Put

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another way, the payment zone 102 is within or coextensive with the authorization zone 104. The payment zone 102 is a subset of the authorization zone 104 with a ratio of the payment zone 102 to the authorization zone 104 ranging from 0.01:1 to 1:1. It is not necessarily a fixed ratio and can vary between different payment accepting units 120, different mobile devices 150, different users, and over time. While the zones 102, 104, 106 are depicted as having a uniform shape, the zones may not necessarily be uniform (or constant over time) in that the shape can vary. For example, the shape of the Bluetooth range 106 may vary depending on environmental conditions such as obstacles in the room and payment accepting unit 120 door/wall materials.

[0094] Bluetooth Range 106 (sometimes also herein called the "communication zone"): The outermost range is the Bluetooth range 106 (shown in Figures 1-2). This is the area in which the adapter module 100 is able to broadcast its presence. In most situations, the Bluetooth range 106 is a passive range in that no actual data is exchanged between the mobile device 150 and the adapter module 100. While in the Bluetooth range 106, the mobile device 150 monitors the RSSI (Received Signal Strength Indicator).

[0095] Authorization Zone 104: The middle region is the authorization zone 104 (shown in Figures 1-2). This is a computed area based on the RSSI. As mentioned, the mobile device 150 monitors the RSSI while it is in the Bluetooth range 106. When the RSSI reaches a certain predetermined threshold based on In-Range Heuristics, the mobile device 150 can be considered to be in the authorization zone 104. In the authorization zone 104 the mobile device 150 establishes a connection to the adapter module 100 (e.g., a Bluetooth connection (Figure 5) with SSL protection (Figure 6)) and informs the adapter module 100 of its presence. After a successful handshake with the adapter module 100, the mobile device 150 registers the adapter module 100 and the adapter module 100 requests an authorization to the server 130 via the mobile devices' network connection (e.g., a Wi-Fi or cellular connection (Figure 5) with SSL protection (Figure 6)). It is important to note the mobile device 150 and the adapter module 100 have a non-exclusive relationship at this point. The adapter module 100 may collect registrations for all mobile devices 150 that are within the authorization zone 104.

[0096] An authorization occurs in preparation for when the user enters the payment zone 102 (shown in Figures 1-2). An authorization expires in a set period of time (for example, five minutes), so if the mobile device 150 is still in the authorization zone 104 at the time of expiration, the adapter module 100 submits for and receives another authorization.

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This will continue for a set number of times (for example, the limit may be three times to limit cases of numerous authorizations for a mobile device that may remain in the authorization zone 104 for an extended period of time without completing a transaction). Should authorization fail (for instance if the limit had been reached) prior to the user entering the payment zone 102, the adapter module 100 will request authorization when the mobile device 150 enters the payment zone 102 (which adds a few seconds to the experience).

[0097] Payment Zone 102: As a user enters the payment zone 102, the mobile device 150 establishes exclusive control of the adapter module 100. Once established, any other user in the payment zone 102 is put into a "waiting" status.

[0098] In the payment zone 102, the payment can be triggered automatically if the payment processing system has and is in hands-free mode. In such instances, the mobile device 150 is running the application 140 in background mode and will send credit to the payment accepting unit 120 without any explicit user interaction. The user completes the transaction on the payment accepting unit 120 in much the same manner as if cash had been inserted into the payment accepting unit 120 to establish credit. After the user completes the transaction (that may include one or more purchases), details of the transaction are preferably returned to the mobile device 150 and server 130 in separate messages. The message to the server 130 is preferably encrypted with the adapter module's 100 private key (Figure 6) to ensure data integrity. As shown in Figure 7, the "private key" coded message (Encrypted VendDetails) is preferably sent via the mobile device 150. The message to the mobile device 150 may be sent solely for the purpose of closing the transaction. The transaction history and balance are updated server-side via the encrypted message sent to the server 130.

[0099] The other mode of operation is manual mode. In manual mode, the user launches the mobile device 150 and is able to swipe to send payment to the payment accepting unit 120. The user can also swipe back to cancel the payment. Like in hands-free mode, the purchase transaction is completed on the payment accepting unit 120 in the same manner as if cash were inserted into the payment accepting unit 120. The mobile device 150 is only used to send payment. Selection is made directly on the payment accepting unit 120.

[00100] Self-Calibrating Zone Threshold: A key, but optional feature, of the payment processing system is a self-calibrating payment zone RSSI threshold. Because RSSI can vary machine to machine, environment to environment, and device to device, having a fixed threshold at which payment is triggered can be problematic. The approach suggested herein is

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the creation of a self-calibrating threshold. When the user is interacting with the payment accepting unit 120 (such as when he makes his selection on the payment accepting unit 120), the payment accepting unit 120 notifies the adapter module 100 and the adapter module 100 logs the conditions such as RSSI, type of user mobile device 150, accelerometer data, and other information. It is at this point that it can be ascertained safely that the user is within arm's-length from the payment accepting unit 120 (by necessity the user is arm's-length because he is making some physical interaction with the payment accepting unit 120). This is the only point in the entire transaction in which it can be certain that the user is within arm's-length from the payment accepting unit 120.

[00101] Figure 4 shows a simplified set of steps involved when users enter the payment zone 102. Specifically, Figure 4 shows that credit is established 200 (this may have been done in the authorization zone 104, but if not it would be handled in the payment zone 102), that the user makes a selection using the machine 202, that the machine notifies the adapter module of the selection 204, that the adapter module (optionally) logs the RSSI 206, and that the purchase process(es) continues 208. Using the historically logged RSSI data, the adapter module 100 calculates one of several "average" RSSI using various mathematical models. This "average" could be a traditional average, a moving average, a weighted average, a median, or other similar summary function. The adapter module 100 could pre-process the historical data before running the function, such as to eliminate top and bottom data points, suspect data points, etc.

[00102] Optionally, during the handshake between the mobile device 150 and the adapter module 100, the information transmitted to the adapter module 100 may include, for example, the model of the mobile device 150. Using the received information pertaining to the mobile device models, the adapter module 100 can create multiple payment thresholds, one for each mobile device model. This allows for variances that may be inherent in different types of Bluetooth radios. An alternative to this method is for the adapter module 100 to broadcast a baseline payment zone threshold, and the mobile device 150 can use an offset from this baseline based on its specific model type. The payment zone thresholds (or baseline offsets) can be unique to specific types of mobile devices (e.g., by manufacturer, operating system, or component parts), models of mobile devices, or individual mobile devices (unique to each user).

[00103] In a typical scenario in which the payment zone threshold has been calibrated, the adapter module 100 advertises its presence along with the threshold at which it considers

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any mobile device 150 to be in the authorization zone 104. This is a one-way communication from adapter module 100 to mobile device 150. Once the mobile device 150 enters the authorization zone 104, there is a handshake that is established between the adapter module 100 and the mobile device 150. During this handshake, the mobile device 150 can share its model information with the adapter module 100, and the adapter module 100 can return the payment zone 102 threshold for that specific model.

[00104] Optionally, in addition to calibrating the payment zone threshold, the adapter module 100 can apply the self-calibrating model to the authorization zone 104 to calibrate the authorization zone threshold. As with the payment zone thresholds, the authorization zone thresholds can be unique to specific types of mobile devices, models of mobile devices, or individual mobile devices. In this scenario, the adapter module 100 would broadcast multiple thresholds by device type and the mobile device 150 would determine which threshold to apply (or alternatively broadcast a baseline and the mobile device 150 uses an offset based on its device model). Even in this scenario, the authorization zone 104 is a one-way communication.

[00105] Optionally, along with the threshold that is calculated (in the payment and/or the authorization zone(s)), a safety margin can be added to minimize scenarios in which a user is within range, but the mobile-device-to-machine payment processing system does not recognize it because the threshold may not have been reached. For example, if the calculated RSSI for an iPhone™ 5 on machine 4567 is -68 db, the mobile-device-to-machine payment processing system may add a safety margin of -5 db, and establish the threshold at -73 db. So when a user's phone is communicating with the adapter module 100 at an RSSI of -73 db or better, the mobile-device-to-machine payment processing system will allow the mobile device 150 to credit the payment accepting unit 120. The safety margin can be set on the server 130 and downloaded to the adapter module 100, or set on the mobile device 150, or set on the adapter module 100 itself.

[00106] Optionally, in the payment zone threshold, the mobile device 150 can use other data to determine when to cancel the exclusive control of the payment accepting unit 120, to identify when the user is moving out of the payment zone 102. External data could include accelerometer data from the mobile device 150. Using that data, the mobile device 150 can determine whether the user is standing relatively still in front of the payment accepting unit 120, or if the user is in motion – effectively walking away from the payment accepting unit 120.

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SIGNAL UNAVAILABILITY ADAPTATION

[00107] The mobile-device-to-machine payment processing system described herein uses a mobile device's 150 short-range communication technology (e.g., Bluetooth mechanisms) (shown as short-range communication capability 876 in Figure 21) and a mobile device's 150 long-range communications technology (e.g., cellular and/or Wi-Fi mechanisms) (shown as long-range communication capability 872 in Figure 21). The short-range communication capability 876 communicates with the adapter module's 100 short-range communication technology (e.g., Bluetooth mechanisms) (shown as short-range communication capability 776 in Figure 20). The long-range communication capability 872 communicates with the server's 130 long-range communications technology (e.g., cellular and/or Wi-Fi mechanisms) (shown as long-range communication capability 972 in Figure 22). The mobile device 150 (with a mobile application 140 thereon) acts as a communication bridge between the adapter module 100 (associated with a payment accepting unit 120) and the server 130. This process is described herein and works properly if there is cellular or Wi-Fi coverage within the payment zone 102.

[00108] One option if there is no cellular or Wi-Fi coverage within the payment zone 102 is to determine whether there is cellular or Wi-Fi coverage within the authorization zone 104 or the Bluetooth range 106. If there is, then the sizes of the zones 102, 104, 106 could be adapted and the timing could be adapted. For example, if the mobile devices 150 detected problems with the cellular or Wi-Fi coverage within the payment zone 102, the user could carry his mobile device 150 into the other zones (or the mobile device 150 could use short-range communication technology to communicate with other mobile devices 150 within the authorization zone 104 or the Bluetooth range 106) to determine whether the zones have cellular or Wi-Fi coverage. If they do have coverage, communication between the mobile device 150 and the server 130 can be advanced (conducted earlier when the mobile device 150 is further from the machine 120) or delayed (conducted later when the mobile device 150 is further from the machine 120). This can be thought of as changing the size or shapes of the zones 102, 104, 106. The timing would also have to be adjusted so that the authorization of funds (AuthGrant) does not expire before the user has a chance to make a purchase. It also means that balance updates to the server 130 may happen after the user has moved away from the machine 120 and has cellular or Wi-Fi coverage again.

[00109] Another option if there is no cellular or Wi-Fi coverage within any of the zones 102, 104, 106 is for the user to obtain authorization while outside of the zones in a

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place with cellular or Wi-Fi coverage. This may occur, for example, if a user knows that he will be going to a place with a payment accepting unit 120 equipped with an adapter module 100 (perhaps to a favorite payment accepting unit 120) that does not have (or rarely has) cellular or Wi-Fi coverage. A user may also use the mobile application 140 to query payment accepting units 120 in a given range (e.g., within 50 miles) or at a given location (e.g., at a campground or in a particular remote city) to determine whether there is cellular or Wi-Fi coverage within the zones 102, 104, 106. The user can then obtain pre-authorization from the server 130 using the mobile application 140. Again, the timing would also have to be adjusted so that the authorization of funds (AuthGrant) does not expire before the user has a chance to make a purchase. It also means that balance updates to the server 130 may happen after the user has moved away from the machine 120 and has cellular or Wi-Fi coverage again. A mobile-device-to-machine payment system having the ability to implement this option would be able to accept cashless payments without requiring any network connection near the payment accepting unit 120. In some implementations, the mobile-device-to-machine payment processing systems described herein is located in a remote location where no signal is available, therefore, can accept cashless payments.

[00110] As an example of a situation in which there might be no cellular or Wi-Fi coverage within any of the zones 102, 104, 106 of a particular payment accepting unit 120, the user (a teenager) may be traveling to a remote location to attend summer camp where there is no cellular or Wi-Fi coverage. The camp may have several payment accepting units 120 (e.g., a machine that creates a dedicated "hot spot" that requires payment for use, vending machines, or machines for renting equipment such as bikes, kayaks, or basketballs). The camp facility might notify parents that the mobile-device-to-machine payment system is available. The parents, while at home, could obtain authorization for a particular amount (that could be doled out a certain amount per day or limited to type of machine or location) to be authorized and "loaded" into the user's mobile device 150 and specify that the authorization will not expire for a certain period or until a certain date. Thereafter, while at camp, the user could use the mobile application 140 on his mobile device 150 in a manner similar to those discussed elsewhere herein. Short-range communications may be used for communications between the adapter modules 100 (associated with the machines 120) and users' mobile devices 150.

[00111] One subtle but powerful component of the payment processing system described herein is that it requires a long-range communication capability (e.g., an Internet or

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cellular network connection) only in the authorization zone 104 and only for the time period required to send the AuthRequest and receive the AuthGrant. Once a valid AuthGrant is received by the mobile device 150, the long-range communication capability (e.g., an Internet or cellular network connection) is not required by either the mobile device 150 or the adapter module 100 in the payment zone 102 as long as the AuthGrant is valid (unexpired). This mechanism allows the system to seamlessly handle authenticated transactions in (temporary) offline mode, with the deferred acknowledgement and transaction messages performing the bookkeeping and cleanup when network connection is regained. The alternatives described above provide a unique way to artificially extend the authorization zone to include any location where the mobile device 150 can communicate with the server 130.

MULTIPLE USER RESOLUTION

[00112] As shown in Figure 2, in one practical scenario, multiple users are in the zones 102, 104, 106. As shown in Figure 2, users 1, 2, and 3 are in the payment zone 102 near the machine 120; users 5 and 6 are shown as positioned between the authorization zone 104 and the Bluetooth range 106; users 4 and 7 are in the Bluetooth range 106, user 10 is positioned on the edge of the Bluetooth range 106; and users 8 and 9 are positioned outside of Bluetooth range 106. In some implementations, the mobile-device-to-machine payment processing system manages and resolves issues pertaining to multiple users.

[00113] Users 4 and 7 are within the Bluetooth range 106 and the user 10 is either entering or leaving the Bluetooth range 106. Within the Bluetooth range 106 the users' mobile devices 150 are able to see the adapter module's 100 advertisement. In this zone, the mobile device 150 preferably does not initiate a connection. The adapter module 100 is preferably unaware of the users in the Bluetooth range 106. All the adapter module 100 is doing is advertising its presence to any multitude of users that may be in Bluetooth range 106.

[00114] The adapter module 100 begins to log users as the users (and their respective mobile devices 150) enter the authorization zone 104 (shown in Figure 2 as users 5 and 6). At this point, there is a non-exclusive connection initiated by the mobile device 150 to the adapter module 100. It does a handshake (e.g., to exchange information needed to obtain authorization and, optionally, to log information needed for a self-calibrating authorization zone threshold) and the mobile device 150 contacts the server 130 for an authorization (e.g., sending an AuthRequest and receiving an AuthGrant). The adapter module 100 registers all

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mobile devices 150 that have requested and received AuthGrants. The adapter module 100 continues communicating with any other mobile device 150 that enters the authorization zone 104. After initial contact, the adapter module 100 may provide the mobile device 150 with a deferral delay of when to check back in with the adapter module 100 allowing opportunity for other mobile devices 150 to communicate with the adapter module 100.

[00115] If there is only one user in the payment zone 102, a purchase transaction may be performed. If there are multiple users in the payment zone 102, the mobile-device-to-machine payment system must handle the situation.

[00116] One optional solution for handling the situation of the multiple users in the payment zone 102 is queuing users in the payment zone 102. Once any mobile device 150 enters the payment zone 102, it establishes exclusivity to a particular mobile device 150 (e.g., in a first-come-first-serve manner). Technically, however, the adapter module 100 is not establishing an exclusive connection to the mobile device 150. The adapter module 100 can still perform a round-robin poll and communicate with and advertise to other mobile devices 150. Instead, the adapter module 100 establishes a queue prioritized by RSSI and time (e.g., who was first and whether the authorization has expired) and it notifies (e.g., alerts) other mobile devices 150 to wait. The earliest valid (unexpired) authorization takes precedence when there is any tie in the RSSI. Otherwise, for example, the strongest average RSSI takes priority. Preferably the queue is not a static measure of the RSSI but an averaged measure over the period of time in the queue. This compensates for a scenario in which a user may be walking around in the queue and then shows up at the payment accepting unit 120 just as the previous user is finishing. If another user was also in the payment zone 102 and stood there the entire time, but may have newer authorization, he could win out.

[00117] Anytime that the adapter module 100 cannot determine exactly which user is in the payment zone 102 in front of the payment accepting unit 120, the adapter module 100 will disable hands-free payment. The mobile device 150 will send an alert to the user and he can use swipe to pay (manual mode). All users in payment zone 102 will show "Connected" and the first to swipe payment to the payment accepting unit 120 then locks out other users.

MULTIPLE MODULE RESOLUTION

[00118] In the scenario where there are multiple modules present, determining which payment accepting unit 120 a user is in front of can be a challenge. In some implementations, the mobile-device-to-machine payment processing system described herein allows adapter

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modules 100 to communicate to other adapter modules 100 in range via Bluetooth. Each user receives authorization grants for specific payment accepting units 120. This means if there are multiple adapter modules 100 within the same authorization zone 104, there will be multiple authorization grants for the user. When the user enters the payment zone 102, it can be difficult to differentiate which payment accepting unit 120 the user is in front of if the payment zones 102 overlap.

[00119] To solve this problem, when the user enters the payment zone 102, the adapter modules 100 communicate with each other to determine the RSSI for the particular user (based on the signal from his mobile device 150) to triangulate which adapter module 100 (and the associated payment accepting unit 120) is closer to the user. Optionally, the inter-module communications can restrict the user to establishing an exclusive connection with only one payment accepting unit 120.

[00120] Optionally, when the user connects to a payment accepting unit 120, the mobile device 150 can send a communication to the payment accepting unit 120 for momentary display to the user on the display 122, 124 of the payment accepting unit 120. For example, the mobile device 150 can send a communication (e.g., "connected" or "Fred's Mobile Device Connected") to the payment accepting unit's display 122, 124 for a predetermined period of time (e.g., 1-3 seconds) so when the user is in payment zone 102, it is clear which payment accepting unit 120 the user is connected to prior to making a purchase (either in hands-free or manual mode).

[00121] In addition, when the user is in manual mode, the mobile device 150 can display (e.g., on the touch screen 152 as shown in Figures 10A-10D) a visual indication of the payment accepting unit 120 (e.g., a picture and/or a payment accepting unit ID of the payment accepting unit 120) for visual confirmation. If the user is in manual mode, the user can manually change the payment accepting unit 120.

DESCRIPTIVE SCENARIO

[00122] Figure 7, Figures 8A-8G, and 9A-9E (as well as other figures) can be used to understand a detailed scenario of the mobile-device-to-machine payment processing system described herein. A flow of communications and steps are loosely described below with reference to these (and other figures). It should be noted that alternative scenarios could include, for example, a modified order of the steps performed.

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[00123] Prior to vending transactions, a user downloads a mobile application 140 onto his mobile device 150, creates an account, and configures a funding source via, for example, a funding source server 160. A funding source may be, for example, a debit card, a credit card, campus cards, rewards points, bank accounts, payment services (e.g., PayPal™) or other payment option or combination of payment options known or yet to be discovered. The funding sources may be traditional and/or nontraditional payment sources that are integrated into the ecosystem described herein and then used indirectly as a source of funds. Funds from the funding source are preferably held on the server 130 such that when an AuthRequest is received by the server 130, the server 130 can send an AuthGrant authorizing funds for a purchase.

[00124] The user can specify one or more "favorite" adapter module(s) 100 (that has a one-to-one relationship to the payment accepting unit 120) that he may visit regularly, such as a vending machine at school or work. Favorite adapter modules 100 appear on a pre-filtered list and allow for additional rich features such as hands-free payment.

[00125] The payment accepting unit 120 may be equipped with an adapter module 100 that is constantly advertising its availability via Bluetooth (or other "signals," "communications," and/or "transmissions"). This ongoing advertising and scanning for adapter modules is shown in Figure 8A. As shown, the mobile device 150 is continuously scanning for any adapter module 100 within Bluetooth (or other "signal," "communication," and/or "transmission") range. When the user is within range of that adapter module 100, the mobile device 150 tracks and monitors the signal strength until a predetermined "authorization zone" threshold is achieved.

[00126] Figures 8B and 9A generally show that when the authorization zone threshold is reached, the mobile device 150 enters the authorization zone (block 302) and registers the adapter module 100. The mobile device 150 connects to the server 130 (block 304). The application 140 on the mobile device 150 creates a request for authorization (AuthRequest) and passes the AuthRequest to the server 130 using appropriate communication technology (e.g., GSM, CDMA, Wi-Fi, or the like) (block 306). The server 130 responds with an authorization grant (AuthGrant) encrypted with the specific adapter module's private key (block 306). This authorization token may minimally include the User identifier (ID), Apparatus ID (for the adapter module 100), authorization amount, and expiration time. The mobile device 150 receives the AuthGrant from the server 130, and retains it until the mobile device 150 is ready to issue payment to an adapter module 100. The mobile device 150

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collects all pending AuthGrants that may be one or more depending on how many adapter modules 100 are in-range. Unused AuthGrants that expire are purged from the mobile device 150 and the server 130. It is important to note that the mobile device 150 is unable to read the AuthGrant because it is encrypted with the adapter module's unique private key that is only known to server 130 and adapter module 100. This provides a preferred key element of security in the system as the adapter module 100 only trusts AuthGrants that are issued by the server 130, and the AuthGrants cannot be read or modified by the mobile device 150 or any other party in between the server and the adapter module 100. Additional mobile devices 150 may enter the authorization zone 104 (block 308).

[00127] As the user approaches a specific adapter module 100, the user enters the payment zone 102 and an event threshold is triggered based on heuristics performed by the mobile device 150. Blocks 310 and 312 show the loop steps of waiting for a mobile device 150 from the authorization zone 104 to enter the payment zone 102. If the user leaves the authorization zone 104 without entering the payment zone 102, the adapter module 100 returns to advertising its presence (block 300).

[00128] Figures 8C and 9B generally show the user entering the payment zone. The mobile device 150 verifies that it has an unexpired and valid AuthGrant. If the AuthGrant is not good, it may be requested again, repeating the Authorization Request process (block 315). If the AuthGrant is good, the mobile device 150 sends the valid AuthGrant (including the wallet balance (block 322)) to the adapter module 100 to initiate a transaction. The mobile device 150 may issue the AuthGrant automatically without specific user interaction if the hands-free mode is supported (and the device is a favorite (block 318), there is only one device in the payment zone 102 (block 318), and (optionally) there is only one user in the authorization zone 104 (block 320). If any of these factors are not present, the mobile device 150 will prompt and/or wait for the user to begin the transaction manually (block 324).

[00129] Figures 8D, 9C, and 9D generally show the transaction process. As shown in Figure 9C, the adapter module 100 runs through a series of questions to determine if there are any issues that would prevent vending including: has the user canceled in-app? (block 326), has the user walked away? (block 328), is the coin return pressed? (block 330), has more than a predetermined period of time elapsed? (block 332). If the answer to any of these questions is "yes," the transaction does not proceed. If the answers to all of these questions is "no," the user makes a selection (block 334) on the payment accepting unit 120 in the same or similar manner as compared to if cash or credit were presented to the payment accepting unit 120. If

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the machine 120 is able to vend (block 336), it attempts to release the product. If the vend fails (block 338) it is reported by the machine (block 340) and a credit is returned to the virtual wallet (block 342). If the vend is successful (block 338) it is reported by the machine (block 344). Put another way, after the transaction is complete, the adapter module 100 returns to the mobile device 150 the details of the transaction as well as an encrypted packet containing the vend details to be sent to the server 130 via the mobile device 150. Optionally, the adapter module 100 can pass additional information not directly related to the transaction such as payment accepting unit health, sales data, error codes, etc.

[00130] Figures 8D and 9E generally show the multi-vend function. If the machine has enabled multi-vend capabilities (block 350) and the multi-vend limit has not been reached, the process returns to the question of whether the user is in the payment zone (block 310 of Figure 9A). If the machine does not have enabled multi-vend capabilities (block 350) or the multi-vend limit has been reached, the wallet is decremented by the vend amount(s) and "change" is returned to the virtual wallet (block 354) and the process ends (block 356).

[00131] Figure 8E is a schematic flow diagram of an example login process. Figure 8F is a schematic flow diagram of an example boot-up process. Figure 8G is a schematic flow diagram of an example account check/update process.

[00132] Several of the figures are flow charts (e.g., Figures 9A-9E) illustrating methods and systems. It will be understood that each block of these flow charts, components of all or some of the blocks of these flow charts, and/or combinations of blocks in these flow charts, may be implemented by software (e.g., coding, software, computer program instructions, software programs, subprograms, or other series of computer-executable or processor-executable instructions), by hardware (e.g., processors, memory), by firmware, and/or a combination of these forms. As an example, in the case of software, computer program instructions (computer-readable program code) may be loaded onto a computer to produce a machine, such that the instructions that execute on the computer create structures for implementing the functions specified in the flow chart block or blocks. These computer program instructions may also be stored in a memory that can direct a computer to function in a particular manner, such that the instructions stored in the memory produce an article of manufacture including instruction structures that implement the function specified in the flow chart block or blocks. The computer program instructions may also be loaded onto a computer to cause a series of operational steps to be performed on or by the computer to produce a computer implemented process such that the instructions that execute on the

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computer provide steps for implementing the functions specified in the flow chart block or blocks. Accordingly, blocks of the flow charts support combinations of steps, structures, and/or modules for performing the specified functions. It will also be understood that each block of the flow charts, and combinations of blocks in the flow charts, may be divided and/or joined with other blocks of the flow charts without affecting the scope of the invention. This may result, for example, in computer-readable program code being stored in whole on a single memory, or various components of computer-readable program code being stored on more than one memory.

ADDITIONAL IMPLEMENTATIONS

[00133] Figure 23 illustrates a schematic flow diagram of a process 1000 of authenticating a user to perform a transaction in the payment processing system in accordance with some implementations. In some implementations, the payment processing system includes one or more payment modules 100 (e.g., each associated with a respective payment accepting unit 120 such an automatic retailing machine for dispensing goods and/or services), one or more mobile devices 150 (e.g., each executing the application 140 for the payment processing system either as a foreground or background process), and the server 130. The server 130 manages the payment processing system and, in some cases, is associated with an entity that supplies, operates, and/or manufactures the one or more payment modules 100. For brevity, the process 1000 will be described with respect to a respective payment module 100 and a respective mobile device 150 in the payment processing system.

[00134] The payment module 100 broadcasts (1002), via a short-range communication capability (e.g., BLE), a packet of information (sometimes also herein called "advertised information"). The packet of information at least includes an authorization code and an identifier associated with the payment module 100 (module ID). In some implementations, the packet of information further includes a firmware version of the payment module 100 and one or more status flags corresponding to one or more states of the payment module 100 and/or the payment accepting unit 120. The information included in the packet broadcast by the payment module 100 is further discussed below with reference to Figure 24A.

[00135] In some implementations, the payment module 100 sends out a unique authorization code every X seconds (e.g., 100 ms, 200 ms, 500 ms, etc.). In some implementations, the unique authorization codes are randomly or pseudo-randomly generated

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numbers. In some implementations, the payment module 100 stores broadcasted authorization codes until a received authorization grant token matches one of the stored authorization codes. In some implementations, the payment module 100 stores broadcasted authorization codes for a predetermined amount of time (e.g., Y minutes) after which time an authorization code expires and is deleted. In some implementations, the authorization code is encrypted with a shared secret key known by the server 130 but unique to the payment module 100. In some implementations, the payment module 100 initializes a random number and then the authorization codes are sequential counts from this random number. In such implementations, the payment module 100 stores the earliest valid (unexpired) counter without a need to store every valid authorization code. In some implementations, the authentication code included in the broadcast packet of information is a hash value of the randomly or pseudo-randomly generated number or the sequential number.

[00136] The mobile device 150 receives the broadcasted packet of information, and the mobile device 150 sends (1004), via a long-range communication capability (e.g., GSM, CDMA, Wi-Fi, or the like), an authorization request to the server 130. For example, an application 140 that is associated with the payment processing system is executing as a foreground or background process on the mobile device 150. In this example, the application 140 receives the broadcasted packet of information when the mobile device 150 is within the communication zone of the payment module 100 (i.e., BLE range) and either automatically sends the authorization request to the server 130 or sends the authorization request to the server 130 when the mobile device 150 is within the authorization zone of the payment module 100. In some implementations, the broadcasted packet of information includes a baseline authorization zone threshold (i.e., an authorization zone criterion) indicating a baseline RSSI that the mobile device 150 (or the application 140) is required to observe before being within the authorization zone of the payment module 100. In some implementations, the mobile device 150 (or the application 140) offsets the baseline authorization zone threshold based on the strength and/or reception of the short-range communication capability (e.g., BLE radio/transceiver) of the mobile device 150. In some implementations, the authorization request at least includes the authorization code which was included in the broadcasted packet of information, an identifier associated with the user of the mobile device 150 or the user account under which the user of the mobile device 150 is logged into the application 140 (user ID), and the identifier associated with the payment module 100 (module ID). In some implementations, the authentication code included in

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authorization request is the hash value in cleartext. The authorization request is further discussed below with reference to Figure 24B.

[00137] After receiving the authorization request, the server 130 processes (1006) the authorization request. In some implementations, the server 130 decrypts the authorization code included in the authorization request with the shared secret key corresponding to the payment module 100. In some implementations, the server 130 determines whether the user associated with the user ID in the authorization request has sufficient funds in his/her account for the payment processing system to perform a transaction at the machine 120 that is associated with the payment module 100 corresponding to the module ID in the authorization request.

[00138] The server 130 sends (1008), via a long-range communication capability (e.g., GSM, CDMA, Wi-Fi, or the like), an authorization grant token to the mobile device 150. In some implementations, the server 130 does not send the authorization grant token if the authorization code in the authorization request cannot be decrypted with the shared secret key corresponding to the payment module 100 (e.g., the authorization code is corrupted or hacked). In some implementations, the server 130 does not send the authorization grant token if the user associated with the user ID in the authorization request does not have sufficient funds in his/her account. In some implementations, in addition to the authorization grant token, the server 130 sends a message directly to the mobile device 150 which is not encrypted with the shared secret key corresponding to the payment module 100. After receiving the message, the mobile device 150 displays an appropriate message to the user such as insufficient balance or declined authorization. In some implementations, the server 130 sends an authorization grant token for an amount equal to zero; in which case, the payment module 100 interprets this as a declined or failed authorization which can result for any number of reasons including, but not limited to, insufficient balance or credit.

[00139] The mobile device 150 receives the authorization grant token, and, subsequently, the mobile device 150 detects (1010) a trigger condition. In some implementations, the mobile device 150 (or the application 140) detects the trigger condition via the hand-free mode (e.g., upon entrance into the payment zone of the payment module 100) or manual mode (e.g., interacting with the user interface of the application 140 to initiate a transaction with the payment accepting unit associated with the payment module 100).

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[00140] In some implementations, unused authorization grants (e.g., if there was no trigger condition or it expired) are canceled by the mobile device 150 by sending a cancellation message to the server 130 corresponding to the unused authorization grant. In some implementations, the server 130 denies or limits the number of authorization grants sent to the mobile device 150 until it has received transaction information or cancellation of authorization outstanding authorization grants sent to the mobile device 150.

[00141] In response to detecting the trigger condition, the mobile device 150 sends (1012), via a short-range communication capability (e.g., BLE), the authorization grant token to the payment module 100. Subsequently, the machine 120 displays credit to the user (e.g., via one of the displays 122 or 124 shown in Figure 19) and the user interacts with the input mechanisms of the machine 120 (e.g., via the buttons 126 or a touch screen display 124 shown in Figure 19) to purchase products and/or services.

[00142] Figure 24A illustrates a block diagram of a packet 1100 of information broadcast by the payment module 100 (e.g., in step 1002 of the process 1000 in Figure 23) in accordance with some implementations. In some implementations, the packet 1100 at least includes: module ID 1102 and authorization code 1104. In some implementations, the packet 110 additional includes: a firmware version 1106 and one or more status flags 1108.

[00143] In some implementations, the module ID 1102 is a unique identifier corresponding to the payment module 100 (sometimes also herein called the "adapter module 100") that broadcast the packet 1100.

[00144] In some implementations, the authorization code 1104 is a hash value in cleartext. In some implementations, the payment module 100 randomly or pseudo-randomly generates a number or determines a sequential number (*See* step 1002 of process 1000 in Figure 23) and performs a predetermined hash function (e.g., SHA-256) on the number to produce the hash value as the authorization code 1104. In some implementations, the authorization code 1104 is a unique code that is encrypted with a secret encryption key corresponding to the payment module 100. The secret encryption key is shared with the server 130, which enables the server 130 to decrypt the authorization code 1104 and encrypt the authorization grant token but not the mobile device 150. In some implementations, the encryption between server 130 and payment module 100 is accomplished by two pairs of public/private keys.

[00145] In some implementations, the firmware version information 1106 identifies a current firmware version 1112 of the payment module 100. In some implementations, the firmware version information 1106 also includes update status information 1114 indicating one or more packets received by the payment module 100 to update the firmware or one or more packets needed by the payment module 100 to update the firmware. In some implementations, the one or more status flags 1108 indicate a state of the payment module 100 and/or the payment accepting unit 120 associated with the payment module 100. In some implementations, the one or more status flags 1108 indicate a state of the payment module 100 such upload information indicator 1116 indicating that that the payment module 100 has information to be uploaded to the server 130 (e.g., transaction information for one or more interrupted transactions). In some implementations, upload information indicator 1116 triggers the mobile device 150 to connect to payment module 100 immediately (e.g., if it has interrupted transaction information to be uploaded to the server 130). In some implementations, the one or more status flags 1108 indicate a state of the payment accepting unit 120 including one or more of an error indicator 1118 (e.g., indicating that a bill and/or coin acceptor of the payment accepting unit 120 is experiencing a jam, error code, or malfunction), a currency level indicator 1120 (e.g., indicating that the level of the bill and/or coin acceptor reservoir of the payment accepting unit 120 is full or empty), and/or inventory level(s) indicator 1122 (e.g., indicating that one or more products of the payment accepting unit 120. In some implementations, the one or more status flags 1108 are error codes issued by payment accepting unit 120 over the MDB.

[00146] In some implementations, the zone criteria information 1110 specifies an authorization zone criterion 1124 (e.g., a baseline authorization zone threshold indicating a baseline RSSI that the mobile device 150 (or the application 140) is required to observe before being within the authorization zone of the payment module 100) and/or a payment zone criterion 1126 (e.g., a baseline payment zone threshold indicating a baseline RSSI that the mobile device 150 (or the application 140) is required to observe before being within the payment zone of the payment module 100). In some implementations, the baseline authorization zone threshold and the baseline payment zone threshold are default values determined by the server 130 or stored as variables by the application 140, in which case the authorization zone criterion 1124 and payment zone criterion 1126 are offsets to compensate for the strength and/or reception of the short-range communication capability (e.g., BLE radio/transceiver) of the payment module 100. Alternatively, zone criteria information 1110

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includes a spread between the baseline authorization zone threshold and the baseline payment zone threshold. Thus, the mobile device 150 (or the application 140) determines the baseline authorization zone threshold and the baseline payment zone threshold based on the spread value and a default value for either the baseline authorization zone threshold or the baseline payment zone threshold. For example, the spread indicates -10 db and the default baseline payment zone threshold is -90 db; thus, the baseline authorization zone threshold is -80 db. Continuing with this example, after determining the baseline authorization zone threshold and the baseline payment zone threshold, the mobile device 150 (or the application 140) may further adjust the authorization zone threshold and/or the payment zone threshold based on the strength and/or reception of its short-range communication capability (i.e., BLE radio/transceiver).

[00147] Figure 24B is a block diagram of an authorization request 1130 sent by the mobile device 150 to the server 130 (e.g., in step 1004 of the process 1000 in Figure 23) in accordance with some implementations. In some implementations, the authorization request 1130 at least includes: a module ID 1102, a user ID 1134, and an authorization code 1104.

[00148] In some implementations, the module ID 1102 is a unique identifier corresponding to the payment module 100 that broadcast the 1100 that included the authorization code 1104.

[00149] In some implementations, the user ID 1134 is an identifier associated with the user of the mobile device 150 sending the authorization request 1130 to the server 130. In some implementations, the user ID 1134 is associated with the user account under which the user of the mobile device 150 is logged into the application 140.

[00150] In some implementations, the authorization code 1130 includes the authorization code 1104 included in the packet 1100 of information that was broadcast by the payment module 100.

[00151] Figure 24C is a block diagram of an authorization grant token 1140 sent by the server 130 to the mobile device 150 (e.g., in step 1008 of the process 1000 in Figure 23) in accordance with some implementations. In some implementations, in accordance with a determination that the authorization code 1136 included in the authorization request 1130 from the mobile device 150 is valid and that the user associated with the mobile device 150 has sufficient funds in his/her account for the payment processing system, the server 130 generates the authorization grant token 1140. In some implementations, the authorization

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grant token 1140 at least includes: a module ID 1102, a user ID 1134, an authorized amount 1146, (optionally) an expiration period offset 1148, and (optionally) the authorization code 1104.

[00152] In some implementations, the module ID 1102 is a unique identifier corresponding to the payment module 100 that broadcast the packet 1100 that included the authorization code 1104.

[00153] In some implementations, the user ID 1134 is an identifier associated with the user of the mobile device 150 that sent the authorization request 1130 to the server 130.

[00154] In some implementations, the authorized amount 1146 indicates a maximum amount for which the user of the mobile device 150 is authorized for a transaction using the authorization grant token 1140. For example, the authorized amount 1146 is predefined by the user of the mobile device 150 or by the server 130 based on a daily limit or based on the user's total account balance or based on a risk profile of the user correspond to the user ID 1134.

[00155] In some implementations, the expiration period 1148 offset indicates an offset to the amount of time that the payment module 100 holds the authorization grant token 1140 valid for initiation of a transaction with the machine 120 associated with the payment module 100. For example, the expiration period offset 1148 depends on the history and credit of the user of mobile device 150 or a period predefined by the user of mobile device 150.

[00156] In some implementations, the authorization grant token 1140 further includes the authorization code 1104 that was included in the authorization request 1130. In some implementations, when the authorization code 1104 is the hash value, the server 130 encrypts the authorization grant token 1140 including the hashed value with the shared secret encryption key associated with payment module 100. Subsequently, when mobile device 150 sends the authorization grant token 1140 to payment module 100 after detecting a trigger condition, the payment module 100 decrypts the authorization grant token 1140 using the secret key known only to server 130 and payment module 100 (which authenticates the message and the authorization grant), and then matches the hash value included in the decrypted authorization grant token 1140 to previously broadcast valid (unexpired) hash values (i.e., auth codes) to determine validity of the (which was known only by payment module 100).

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[00157] Figure 24D illustrates a block diagram of transaction information 1150 generated by the payment module 100 (e.g., in step 1254 of the process 1250 in Figure 25B) in accordance with some implementations. In some implementations, the transaction information 1150 includes: a transaction ID 1152 for the respective transaction, a module ID 1154, a user ID 1156, (optionally) the authorization code 1158, transaction status information 1160, the transaction amount 1162, and other information 1164.

[00158] In some implementations, the transaction ID 1152 is a unique identifier corresponding to the respective transaction. In some implementations, the transaction ID 1152 is encoded based on or associated with the time and/or date on which and the location at which the respective transaction took place.

[00159] In some implementations, the module ID 1154 is a unique identifier corresponding to the payment module 100 that performed the respective transaction.

[00160] In some implementations, the user ID 1156 is an identifier associated with the user of the mobile device 150 that initiated the respective transaction.

[00161] In some implementations, the authorization code 1158 corresponds to the original authorization code (e.g., auth code 1104, Figures 24 A-24C) and/or authorization grant token (e.g., auth grant token 1140, Figure 24C) that was used to initiate the respective transaction. In some implementations, the authorization code 1156 is encrypted with a unique encryption key corresponding to the payment module 100.

[00162] In some implementations, the transaction status information 1160 includes an indication whether the respective transaction was completed, not-completed, or aborted. For example, the respective transaction is incomplete if a jam occurred at the payment accepting unit 120 and the user did not receive the product associated with the respective transaction. For example, if the user walks away from the payment accepting unit 120 after money was credited for the respective transaction, the respective transaction is aborted. In another example, if respective transaction times out after a predetermined time period because the user failed to select a product at the payment accepting unit 120, the respective transaction is aborted. In another example, if the user actuates a bill or coin return mechanism of the payment accepting unit 120, the respective transaction is aborted.

[00163] In some implementations, the transaction amount 1162 indicates the amount of the respective transaction or the amount of each of multiple transactions (e.g., in a multi-vend

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scenario). In some implementations, the transaction amount 1162 is encrypted with a unique encryption key corresponding to the payment module 100.

[00164] In some implementations, the other information 1164 includes other information related to the respective transaction such as the items dispensed by the payment accepting unit 120 and the type of transaction (e.g., coins, bills, credit card, manual mode, hands-free mode, etc.). In some implementations, the other information 1164 includes other information related to the payment module 100 and/or the payment accepting unit 120 associated with the payment module 100. For example, the other information 1164 includes a verification request to the server 130 in order to implement new firmware. In another example, the other information 1164 includes transaction information from one or more previous interrupted transactions. In another example, the other information 1164 includes transaction information for one or more transactions paid via bills and/or coins. In another example, the other information 1164 includes inventory information as to one or more products of the payment accepting unit 120.

[00165] Figure 25A illustrates a schematic flow diagram of a process 1200 for providing a representation of a machine event at a mobile device in accordance with some implementations. In some implementations, the payment processing system includes one or more payment modules 100 (e.g., each associated with a respective payment accepting unit 120 such an automatic retailing machine for dispensing goods and/or services), one or more mobile devices 150 (e.g., each executing the application 140 for the payment processing system either as a foreground or background process), and the server 130. The server 130 manages the payment processing system and, in some cases, supplies, operates, and/or manufactures the one or more payment modules 100. For brevity, the process 1200 will be described with respect to a respective payment module 100 associated with a respective payment accepting unit 120 (sometimes also herein called the "machine 120") and a respective mobile device 150 in the payment processing system.

[00166] In some implementations, the process 1200 occurs after the mobile device 150 sends the AuthGrant in Figure 8C. In some implementations, the process 1200 occurs after the mobile device 150 sends the authorization grant to the payment module 100 in operation 1012 of process 1000 in Figure 23.

[00167] The payment module 100 obtains (1202) an indication corresponding to an event at the machine 120. For example, after the process 1000 in Figure 23, the user of the

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mobile device 150 selects a product to purchase from the machine 120 by interacting with one or more input mechanisms of the machine 120 (e.g., buttons 126 or a touch screen display 124 shown in Figure 19), and the machine 120 dispenses the selected product. Continuing with this example, after the product is dispensed, the transaction is complete and the payment module 100 obtains an indication from the machine of the completed transaction. In some implementations, the indication includes the amount of the transaction and (optionally) machine status information associated with the machine 120 such as inventory information as to one or more products of the payment accepting unit 120 and/or the like. In some implementations, the indication includes status information indicating that the transaction was aborted (e.g., via actuation of a coin return mechanism at the machine 120) or that there was an error with the transaction (e.g., a vending jam or other malfunction with the machine 120).

[00168] After obtaining the indication corresponding to completion of the first transaction, the payment module 100 generates (1204) a notification corresponding to the event at the machine 120.

[00169] The payment module 100 sends (1206), via a short-range communication capability (e.g., BLE), the notification to the mobile device 150. In some embodiments, in addition to the notification corresponding to the event at machine 120, the payment module 100 sends a promotion or advertisement to the mobile device 150 that is targeted to the user of the mobile device 150 based on the transaction or the user ID included in the AuthGrant or authorization grant token that initiated the transaction. In some embodiments, in addition to the notification corresponding to the event at machine 120, the payment module 100 sends a pseudo randomly selected promotion or advertisement to the mobile device 150 that is selected from a set of promotions or advertisements stored by the payment module 100. For example, the promotion is a coupon for a free soda following the purchase of ten sodas from the machine 120 by the user of the mobile device 150. For example, the promotion is a random 50% off coupon or free soda coupon. For example, the transaction corresponds to a vended soda and the advertisement corresponds to a new soda from the same company that produces the vended soda.

[00170] The mobile device 150 provides (1208) a representation of the notification. For example, in Figure 26A, the mobile device 150 displays user interface 1302 on touch screen 152 with a message 1306 that indicates that the first transaction is complete. For example, in Figure 26C, the mobile device 150 displays user interface 1320 on touch screen

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152 with a message 1322 that indicates that the transaction was aborted. For example, in Figure 26D, the mobile device 150 displays user interface 1330 on touch screen 152 with a message 1332 that indicates that there was an error with the transaction. For example, the mobile device 150 also displays a representation of the promotion of advertisement on the user interface for the application 140.

[00171] Figure 25B illustrates a schematic flow diagram of a process 1250 for processing acknowledgement information in accordance with some implementations. In some implementations, the payment processing system includes one or more payment modules 100 (e.g., each associated with a respective payment accepting unit 120 such an automatic retailing machine for dispensing goods and/or services), one or more mobile devices 150 (e.g., each executing the application 140 for the payment processing system either as a foreground or background process), and the server 130. The server 130 manages the payment processing system and, in some cases, supplies, operates, and/or manufactures the one or more payment modules 100. For brevity, the process 1250 will be described with respect to a respective payment module 100 associated with a respective payment accepting unit 120 (machine 120) and a respective mobile device 150 in the payment processing system.

[00172] In some implementations, the process 1250 occurs after the mobile device 150 sends the AuthGrant in Figure 8C. In some implementations, the process 1250 occurs after the mobile device 150 sends the authorization grant to the payment module 100 in operation 1012 of process 1000 in Figure 23.

[00173] The payment module 100 obtains (1252) an indication corresponding to completion of a first transaction from the machine 120. For example, after the process 1000 in Figure 23, the user of the mobile device 150 selects a product to purchase from the machine 120 by interacting with one or more input mechanisms of the machine 120 (e.g., buttons 126 or a touch screen display 124 shown in Figure 19), and the machine 120 dispenses the selected product. Continuing with this example, after the product is dispensed, the transaction is complete and the payment module 100 obtains an indication from the machine of the completed transaction. In some implementations, the indication includes the amount of the transaction and (optionally) machine status information associated with the machine 120 such as inventory information as to one or more products of the payment accepting unit 120 and/or the like.

[00174] After obtaining the indication corresponding to completion of the first transaction, the payment module 100 generates (1254) a first notification with first transaction information based on the indication, and the payment module 100 stores the first transaction information. In some implementations, the first transaction information includes a transaction ID for the first transaction, a module ID corresponding to payment module 100, a user ID corresponding to the mobile device 150, transaction status information indicating that the first transaction is complete, and the transaction amount indicated by the indication. In some implementations, the payment module 100 retains the authorization code included in the original broadcasted packet and/or the authorization grant token and includes the authorization code in the first transaction information. In some implementations, the authorization code is encrypted with a secret key corresponding to the payment module 100, which is shared with the server 130 but not the mobile device 150. In some implementations, the first transaction information further includes other information such as the machine status information included in the first notification or transaction information corresponding to previous interrupted transaction(s). See Figure 24D and the accompanying text for further discussion regarding transaction information 1150.

[00175] The payment module 100 sends (1256), via a short-range communication capability (e.g., BLE), the first notification with first transaction information to the mobile device 150. In some embodiments, in addition to first transaction information corresponding to completion of the first transaction at machine 120, the first notification includes a promotion or advertisement to the mobile device 150 that is targeted to the user of the mobile device 150 based on the transaction or the user ID included in the AuthGrant or authorization grant token that initiated the transaction. In some embodiments, in addition to first transaction information corresponding to completion of the first transaction at machine 120, the first notification includes a pseudo randomly selected promotion or advertisement to the mobile device 150 that is selected from a set of promotions or advertisements stored by the payment module 100. For example, the promotion is a coupon for a free soda following the purchase of ten sodas from the machine 120 by the user of the mobile device 150. For example, the promotion is a random 50% off coupon or free soda coupon. For example, the transaction corresponds to a vended soda and the advertisement corresponds to a new soda from the same company that produces the vended soda.

[00176] The mobile device 150 provides (1258) a representation of the first notification. For example, in Figure 26A, the mobile device 150 displays user interface 1302

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on touch screen 152 with a message 1306 that indicates that the first transaction is complete. For example, the mobile device 150 also displays a representation of the promotion of advertisement on the user interface for the application 140.

[00177] The mobile device 150 sends (1260), via a long-range communication capability (e.g., GSM, CDMA, Wi-Fi, or the like), the first transaction information to the server 130.

[00178] The server 130 processes (1262) the first transaction information. For example, the server 130 debits the account of the user associated with the user ID in the first transaction information in the amount indicated by the first transaction information.

[00179] The server 130 sends (1264), via a long-range communication capability (e.g., GSM, CDMA, Wi-Fi, or the like), first acknowledgment information to the mobile device 150. In some implementations, the first acknowledgment information acknowledges that the server 130 received the first transaction information. In some implementations, the first acknowledgment information includes the user ID, the module ID, the transaction ID, and (optionally) the authorization grant included in the transaction information (e.g., auth grant 1158, Figure 24D).

[00180] After receiving the first acknowledgement information, the mobile device 150 sends (1266), via a short-range communication capability (e.g., BLE), the first acknowledgment information to the payment module 100.

[00181] After receiving the first acknowledgment information, the payment module 100 deletes (1268) the stored first transaction information.

[00182] Attention is now directed towards implementations of user interfaces and associated processes that may be implemented on the mobile device 150 with zero or more speakers, zero or more microphones, and a display. For example, the display is a touch screen (sometimes also herein called a "touch screen display") enabled to receive one or more contacts and display information (e.g., media content, websites and web pages thereof, user interface for the application 140, and/or user interfaces for applications). Figures 26A-26D illustrate example user interfaces for providing a representation of a machine event at a mobile device in accordance with some implementations.

[00183] Figures 26A-26D show user interfaces displayed on mobile device 150 (e.g., a mobile phone); however, one skilled in the art will appreciate that the user interfaces shown in Figures 26A-26D may be implemented on other similar computing devices. The user

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interfaces in Figures 26A-26D are used to illustrate the processes described herein, including the process described with respect to Figures 25A-25B and 27A-27B.

[00184] For example, a user of the mobile device 150 approaches a machine 120 (e.g., vending machine 78x928 as shown in Figures 10A-10D) and executes application 140 on the mobile device 150 so as to perform an electronic transaction with the machine 120. For example, with reference to Figures 10C-10D, the user of the mobile device 150 initiates a transaction with the machine 120 (e.g., vending machine 78x928) by performing a swipe gesture at a location corresponding to the representation of the dollar bill (e.g., a substantially vertical swipe gesture from a location corresponding to the representation of the dollar bill to the top edge of the mobile device 150).

[00185] Figure 26A illustrates the mobile device 150 displaying a user interface 1302 of the application 140 on touch screen 152 after the user of the mobile device 150 initiates and performs a transaction with the machine 120. In Figure 26A, the user interface 1302 includes prepaid balance 1304 which indicates that $1.00 has been deducted from the prepaid balance after performing a transaction with the machine 120 as compared to the prepaid balance in Figure 10C-10D (i.e., $9.00 in Figures 10C-10D and $8.00 in Figure 26A). In Figure 26A, the user interface 1302 also includes a message 1306 indicating that the transaction with the machine 120 is complete.

[00186] Figure 26B illustrates the mobile device 150 displaying a user interface 1310 of the application 140 on touch screen 152 after the user of the mobile device 150 initiates a transaction with the machine 120 and an error with the transaction occurs or the transaction is aborted. In Figure 26B, the user interface 1310 shows the representation of the dollar bill sliding onto the touch screen 152 (e.g., in a substantially top to bottom manner). In Figure 26B, the interface 1310 includes prepaid balance 1312 which indicates that no money has been deducted from the prepaid balance after performing a transaction with the machine 120 as compared to the prepaid balance in Figure 10C-10D (i.e., $9.00 in Figures 10C-10D and $9.00 in Figure 26B).

[00187] Figure 26C illustrates the mobile device 150 displaying a user interface 1320 of the application 140 on touch screen 152 after the representation of the dollar bill slides onto the touch screen 152 in Figure 26B due to the transaction being aborted. For example, the user aborts the transaction by actuating a coin return mechanism of the machine 120. In another example, the user aborts the transaction by selection an abort affordance on the

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interface of the application 140 (not shown). In Figure 26C, the user interface 1320 includes a message 1322 indicating that the transaction with the machine 120 was aborted and that the user's account was not debited for the aborted transaction.

[00188] Figure 26D illustrates the mobile device 150 displaying a user interface 1330 of the application 140 on touch screen 152 after the representation of the dollar bill slides onto the touch screen 152 in Figure 26B due to the occurrence of an error with the transaction. For example, a malfunction with the machine 120 (e.g., a vending jam or stuck item) causes the error to occur. In Figure 26D, the user interface 1330 is associated with the application 140 executed on the mobile device 150. In Figure 26D, the user interface 1330 includes a message 1332 indicating that an error occurred during the transaction with the machine 120 and that the user's account was not debited for the transaction.

[00189] Figures 27A-27B illustrate a flowchart diagram of a method 1400 of presenting representations of payment accepting unit events in accordance with some implementations. In some implementations, the method 1400 is performed by a device with one or more processors, memory, one or more output devices, and two or more communication capabilities. For example, in some implementations, the method 1400 is performed by the mobile device 150 (Figures 5 and 21) or a component thereof (e.g., the application 140). In some implementations, the method 1400 is governed by instructions that are stored in a non-transitory computer readable storage medium (e.g., the memory 860, Figure 21) and the instructions are executed by one or more processors (e.g., the processing unit 850, Figure 21) of the device. Optional operations are indicated by dashed lines (e.g., boxes with dashed-line borders).

[00190] After sending a request to a payment module via a first communication capability transaction to initiate a transaction with a payment accepting unit (e.g., an offline-payment operated machine such as a vending machine or kiosk) associated with the payment module, the mobile device obtains (1402) a notification from the payment module via the first communication capability, where the notification indicates an event at the payment accepting unit associated with the payment module. In some implementations, method 1400 occurs after the mobile device 150 sends the AuthGrant in Figure 8C. In some implementations, method 1400 occurs after the mobile device 150 sends the authorization grant to the payment module 100 in operation 1012 of process 1000 in Figure 23. Operation 1206 of Figure 25A, for example, shows the mobile device 150 receiving a notification sent by the payment module 100 (e.g., the adapter module 100, Figures 5 and 20) sent via the first

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communication capability (e.g., a short-range communication technology/protocol such as BLE). The notification indicates an event at the payment accepting unit (e.g., the payment accepting unit 120, Figures 5 and 19) (sometimes also herein called "machine 120") associated with the payment module 100.

[00191] In some implementations, the first communication capability corresponds (1404) to a short-range communication protocol. As described above, the short-range communication protocols include BLE, NFC, and/or other protocols utilizing non-persistent communication channels.

[00192] In response to obtaining the notification, the mobile device provides (1406) a representation of the notification to a user of the mobile device via the one or more output devices of the mobile device. For example, in Figure 26A, the mobile device 150 displays user interface 1302 on touch screen 152 with a message 1306 that indicates that the first transaction is complete. For example, in Figure 26C, the mobile device 150 displays user interface 1320 on touch screen 152 with a message 1322 that indicates that the transaction was aborted. For example, in Figure 26D, the mobile device 150 displays user interface 1330 on touch screen 152 with a message 1332 that indicates that there was an error with the transaction.

[00193] In some implementations, the one or more output devices of the mobile device include (1408) at least one of: a display, one or more speakers, one or more LEDs, and a vibration mechanism. For example, the mobile device 150 includes one or more of a display (e.g., the touch screen 152, Figures 10A-10D), one or more speakers, one or more LEDs, and a vibration mechanism.

[00194] In some implementations, the representation of the notification is at least one of (1410): a message displayed on the display of the mobile device; a banner notification displayed on a display of the mobile device; a vibration alert from the vibration mechanism of the mobile device; an aural alert from the one or more speakers of the mobile device; and a visual alert from the one or more LEDs of the mobile device. For example, in Figures 26B-26D, the representation of the notification includes messages 1306, 1322, and 1332 displayed on the touch screen 152 of the mobile device 150. In another example, the representation of the notification is a predefined sequence of vibrations provided by the vibration mechanism of the mobile device 150. In another example, the representation of the notification is a predefined sequence of tones provided by the one or more speakers of the mobile device 150.

In another example, the representation of the notification is a predefined sequence of blinking LEDs of the mobile device 150.

[00195] In some implementations, the notification indicates (1412) abortion of a transaction initiated by the user of the mobile device. In Figure 26C, for example, the user interface 1320 includes the message 1322 indicating that the transaction has been aborted. For example, the user aborts the transaction by actuating a coin return mechanism of the machine 120. In another example, the user aborts the transaction by selection an abort affordance on the interface of the application 140 (not shown).

[00196] In some implementations, the notification indicates (1414) completion of a transaction between the user of the mobile device and the payment accepting unit. In Figure 26A, for example, the user interface 1302 includes the message 1306 indicating that completion of the transaction with the machine 120 initiated by the user of the mobile device 150.

[00197] In some implementations, the notification indicating completion of the transaction at least includes (1416) an amount of the completed transaction. In Figure 26A, for example, the user interface 1302 includes prepaid balance 1304 which indicates that $1.00 has been deducted from the prepaid balance after performing a transaction with the machine 120 as compared to the prepaid balance in Figure 10C-10D (i.e., $9.00 in Figures 10C-10D and $8.00 in Figure 26A).

[00198] In some implementations, the mobile device sends (1418) at least a portion of the notification to a server via a second communication capability distinct from the first communication capability. Operation 1260 of Figure 25B, for example, shows the mobile device 150 sending first transaction information to the server 130 for a completed transaction via the second communication capability (e.g., a long-range communication protocols such as Wi-Fi, CDMA, GSM, and/or the like). For example, the first transaction information at least includes the amount of the first completed transaction.

[00199] In some implementations, the first communication capability corresponds (1420) to a short-range communication protocol and the second communication capability corresponds to a long-range communication protocol. For example, the first communication capability of the mobile device 150 is a radio/transceiver means for communicating via one or more short-range communication protocols such as BLE, NFC, and/or the like (i.e., a non-persistent communication channel). For example, the second communication capability of the

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mobile device 150 is a radio/transceiver means for communicating via one or more long-range communication protocols such as Wi-Fi, CDMA, GSM, and/or the like.

[00200] In some implementations, the notification indicates (1422) failure of a transaction initiated by the user of the mobile device or a malfunction associated with the payment accepting unit. In Figure 26D, for example, the user interface 1330 includes the message 1332 indicating that there was an error with the transaction. For example, the transaction fails due to a vending jam or other malfunction. In another example, the payment accepting unit experiences a malfunction due to an open door or the like. In some implementations, at least a portion of the failure/malfunction notification is sent to the sever 130 and an alert is subsequently sent to the operator of the payment accepting unit (e.g., the machine 120) by the server 130.

[00201] It should be understood that the particular order in which the operations in Figures 27A-27B have been described is merely for example purposes and is not intended to indicate that the described order is the only order in which the operations could be performed. One of ordinary skill in the art would recognize various ways to reorder the operations described herein. Additionally, it should be noted that details of other processes described herein with respect to other methods described herein are also applicable in an analogous manner to the method 1400 described above with respect to Figures 27A-27B.

[00202] Figure 28A illustrates a block diagram of an offline-payment operated machine 1500 in accordance with some implementations. For example, the offline-payment operated machine 1500 (e.g., a form of the machine 120) is an electro-mechanical machine capable of accepting currency (e.g., coins), which is not connected to any networks (e.g., telephone, cellular, or Wi-Fi). For example, the offline-payment operated machine 1500 is a washer or dryer at a laundromat, a parking meter, a car wash payment kiosk, or other offline-payment operated machine that dispenses goods and/or services.

[00203] In Figure 28A, the offline-payment operated machine 1500 includes a microswitch 1502, a control unit 1506, a power supply 1508, a transistor 1510, and an operation unit 1512. The components of the offline-payment operated machine 1500 in Figure 28A are examples and one of skill in the art will appreciate that various other components may be included in or excluded from the offline-payment operated machine 1500.

[00204] In Figure 28A, the microswitch 1502 is a leveraged microswitch with lever 1504. For example, the microswitch 1502 is a CHERRY BRAND™ microswitch with a normally open terminal ("NO"), a normally closed terminal ("NC"), and a common terminal. For example, the lever 1504 is incorporated into a coin slot of the offline-payment operated machine 1500 and is depressed whenever a coin slides down the coin slot into a coin reservoir of the offline-payment operated machine 1500 (not shown). For example, when the lever 1504 is depressed and the microswitch 1502 is wired in the NO configuration as shown in Figure 28A, the switch is closed. Continuing with this example, when the switch is closed, control unit 1506 receives a pulse (i.e., a payment acceptance signal) from the common terminal of the microswitch 1502 indicating depression of the lever 1504 from the reception of a US quarter (i.e., $0.25) or coin of another value.

[00205] In some implementations, when the control unit 1506 receives a preset sequence of payment acceptance signals indicative of a preset number of coins being received by the microswitch 1502, the control unit 1506 initiates the operation of the offline-payment operated machine 1500. For example, after receiving the preset sequence of payment acceptance signals (e.g., three pulses indicating reception of three US quarters), the control unit 1506 initiates operation of the offline-payment operated machine 1500 by applying current to the gate of the transistor 1510 which allows current to flow from the power supply 1508 to operation unit 1512. For example, the operation unit 1512 is a motor of a dryer which begins spinning once current flows from the power supply 1508.

[00206] In Figure 28A, payment module 1520 (e.g., a form of the adapter module 100, Figures 5 and 20) is configured to be installed in the offline-payment operated machine 1500 so as to retrofit the offline-payment operated machine 1500 to be able to accept electronic payments. In some implementations, the payment module 1520 includes all or some of the components included adapter module 100 in Figure 20 such as processing unit 750, memory 760, a security unit 755, and a communications unit 770. In some implementations, the payment module 1520 also includes a first interface module 1522, a second interface module 1524, and a lead 1536 for drawing power from power supply 1508 of the offline-payment operated machine 1500.

[00207] In Figure 28A, the first interface module 1522 is configured to sample payment acceptance signals from the microswitch 1502 (e.g., a coin receiving switch) via lead 1532 of the offline-payment operated machine 1500. For example, the payment acceptance signals are indicative of a coin being received by the microswitch 1502 which

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depress lever 1504. In Figure 28A, the second interface module 1524 is configured to sample control signals from the control unit 1506 of the offline-payment operated machine 1500 via lead 1534 that initiate an operation of the offline-payment operated machine (e.g., the application of current to the gate of the transistor 1510) in response to receiving a preset sequence of payment acceptance signals from the microswitch 1502 (e.g., the coin receiving switch) indicative of the preset number of coins.

[00208] Figure 28B illustrates signals sampled by the payment module 1520 in accordance with some implementations. In Figure 28B, sample 1550 represents a preset sequence of payment acceptance signals sampled by the first interface module 1522 via lead 1532 that are sent from the microswitch 1502 to the control unit 1506. For example, the preset sequence of payment acceptance signals indicative of the preset number of coins include pulses (i.e., payment acceptance signals) 1552, 1554, 1556, and 1558. For example, the leading edges of pulses 1552, 1554, 1556, and 1558 at times 1582, 1584, 1586, and 1588 indicate reception of a coin by microswitch 1502 which causes the switch to close when wired in the NO configuration as shown in Figure 28A. In Figure 28B, sample 1570 represents a control signal sampled by the second interface module 1524 via lead 1534 that is sent from the control unit 1506 to transistor 1510. In Figure 28B, the sample 1570 includes a pulse 1572 that is sent from the control unit 1506 to transistor 1510 at time 1590 after receiving the preset sequence of payment acceptance signals from the microswitch 1502 (i.e., pulses 1552, 1554, 1556, and 1558).

[00209] Figures 29A-29B illustrate a flowchart diagram of a method of retrofitting an offline-payment operated machine to accept electronic payments in accordance with some implementations. In some implementations, the method 1600 is performed by a payment module with one or more processors and memory. In some implementations, the payment module also includes a short-range communication capability corresponding to a short-range communication protocol (e.g., a non-persistent communication channel such as BLE, NFC, and/or the like), where the short-range communication capability is configured to communicate with one or more mobile devices, where each of the one or more mobile devices is configured with a complimentary short-range communication capability and a long-range communication capability corresponding to a long-range communication protocol (e.g., Wi-Fi, CDMA, GSM, and/or the like).

[00210] In some implementations, the payment module is coupled with an offline-payment operated machine (e.g., the payment accepting unit 120, Figures 5 and 19

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(sometimes also herein called "machine 120"), or the offline-payment operated machine 1500, Figure 28A) such as dryer or washer in a laundromat, a parking meter, a car wash payment kiosk, or the like. In some implementations, the offline-payment operated machine includes a coin receiving switch (e.g., the microswitch 1502, Figure 28A) and a control unit (e.g., the control unit 1506, Figure 28A). In some implementations, the payment module further includes: (A) a first interface module (e.g., the first interface module 1522, Figure 28A) configured to sample payment acceptance signals from the coin receiving switch of the offline-payment operated machine, where the signals are indicative of a coin being received by the coin receiving switch; and (B) a second interface module (e.g., the second interface module 1524, Figure 28A) configured to sample control signals from the control unit of the offline-payment operated machine that initiate an operation of the offline-payment operated machine in response to receiving a preset sequence of payment acceptance signals from the coin receiving switch indicative of the preset number of coins. By sampling and storing these signals, the payment module 1520 is able to simulate operation of a respective coin receiving switch in response to receiving the correct/preset number of coins so as to trigger operation of the offline-payment operated machine in response to completion of an electronic payment.

[00211] For example, in some implementations, the method 1600 is performed by the adapter module 100 (Figures 5 and 20) or payment module 1520 (Figure 28A). In some implementations, the method 1600 is governed by instructions that are stored in a non-transitory computer readable storage medium (e.g., the memory 760, Figure 20) and the instructions are executed by one or more processors (e.g., the processing unit 750, Figure 20) of the payment module. Optional operations are indicated by dashed lines (e.g., boxes with dashed-line borders).

[00212] In some implementations, the payment module detects (1602), via the first interface module, a preset sequence of payment acceptance signals from the coin receiving switch that causes the control unit to initiate the operation of the offline-payment operated machine, where the preset sequence of payment acceptance signals are indicative of a preset number of coins received by the coin receiving switch. For example, with reference to Figures 28A-28B, the first interface module 1522 of the payment module 1520 samples payment acceptance signals via lead 1532 from the microswitch 1502 to the control unit 1506. For example, each of the payment acceptance signals is indicative of reception of a coin by the microswitch 1502. Continuing with this example, the second interface module 1524 of the payment module 1520 samples control signals via lead 1534 from the control unit

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1506 to the transistor 1510. The payment module 1520 detects a preset sequence of payment acceptance signals from the microswitch 1502 that causes the control unit 1506 to apply a current to the gate of the transistor 1510 (e.g., the control signals). For example, the preset sequence of payment acceptance signals is indicative of a preset number of coins received by the microswitch 1502 to cause operation of the offline-payment operated machine 1500. For example, the application of current to the gate of the transistor 1510 allows current to flow from the power supply 1508 to the operation unit 1512 so that the operation. For example, the operation unit 1512 is a motor of a dryer which begins spinning once current flows from the power supply 1508.

[00213] In some implementations, the payment module determines (1604) the predefined signal sequence to emulate the preset sequence of payment acceptance signals from the coin receiving switch. In some implementations, after detecting the preset sequence of payment acceptance signals that causes the control unit 1506 to initiate the operation of the offline-payment operated machine 1500, the payment module 1520 determines a predefined signal sequence to emulate the preset sequence of payment acceptance signals. In some implementations, the money value associated with each pulse in the preset sequence of payment acceptance signals from the microswitch 1502, indicative of the preset number of coins to initiate the operation of the offline-payment operated machine 1500, is a default currency (e.g., USD) and amount (e.g., $0.25) set in the firmware of the payment module 1520. In some implementations, the money value associated with the each pulse in the preset sequence of payment acceptance signals from the microswitch 1502, indicative of the preset number of coins to initiate the operation of the offline-payment operated machine 1500, is set by the server 130 and can be changed remotely by using the mobile device 150 as a communications bridge to send information indicating the value of a pulse from the server 130 to the mobile device 150 via the second communication capability (e.g., GSM, CDMA, or Wi-Fi) and forwarding the information from the mobile device to the payment module 1520 via the first communication capability (e.g., BLE). For instance, in most cases, each pulse is US $0.25.

[00214] In some implementations, determining the predefined signal sequence includes (1606) at least one of: identifying a count of pulses in the present sequence of payment acceptance signals; identifying amplitude of pulses in the present sequence of payment acceptance signals; identifying shape of pulses in the present sequence of payment acceptance signals; and identifying an interval between pulses. In some implementations,

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after detecting the preset sequence of payment acceptance signals (e.g., the sample 1550, Figure 28B), the payment module 1520 determines a predefined signal sequence to emulate the preset sequence of payment acceptance signals by identifying a count of pulses in the preset sequence of payment acceptance signals, an interval between pulses in the preset sequence of payment acceptance signals, the shape of pulses in the preset sequence of payment acceptance signals, and an amplitude of pulses in the preset sequence of payment acceptance signals.

[00215] The payment module receives (1608) a request via the short-range communication capability from a respective mobile device to perform an operation of the offline-payment operated machine. For example, with reference to Figure 8C, the payment module 1520 (Figure 28A) receives the AuthGrant from the mobile device 150 via the short-range communication capability (e.g., BLE) indicating that the user of the mobile device 150 wishes to perform the operation of the offline-payment operated machine 1500 (Figure 28A). For example with reference to operation 1012 in Figure 23, the payment module 1520 (Figure 28A) receives an authorization grant token from the mobile device 150 via the short-range communication capability (e.g., BLE) indicating that the user of the mobile device 150 wishes to perform the operation of the offline-payment operated machine 1500 (Figure 28A).

[00216] The payment module validates (1610) the request. Validation of the request indicates (1612) that the respective mobile device is authorized to initiate payment for the operation by a remote server via the long-range communication capability. In some implementations, the payment module 1520 validates the request from the mobile device 150 by determining whether the AuthGrant or the authorization grant token includes a valid authorization code.

[00217] In accordance with a determination that the request is valid, the payment module causes (1614) the payment operated machine to perform the operation by issuing a predefined signal sequence to the control unit, where the predefined signal sequence emulates a signal sequence that would be issued by the coin receiving switch in response to receiving a preset number of coins. For example, with reference to Figure 28B, the payment module 1520 issues a predefined signal sequence with first interface module 1522 to the control unit 1506 that emulates sample 1550 in Figure 28B. Continuing with this example, in response to receiving the predefined signal sequence from the payment module 1520 control unit 1506 causes initiation of the operation of the offline-payment operated machine 1500 by applying current to the gate of the transistor 1510 which allows current to flow from the power supply

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1508 to operation unit 1512. In some implementations, the control unit 1506 causes initiation of the operation by setting a timer to an amount of time corresponding to the preset number of coins whereby current flows to the gate of the transistor 1510 for the set amount of time. For example, the preset number of coins is a number of a coins required to run the offline-payment operated machine 1500 by for a default amount of time and subsequent coins may be added to extend the amount of time that the offline-payment operated machine 1500 by will run. In some implementations, the preset number of coins is a number of a coins required to cause the offline-payment operated machine 1500 to dispense a purchased item, such as laundry detergent.

[00218] Alternatively, in some implementations, in accordance with a determination that the request is valid, the offline-payment operated machine 1500 displays credit to the user (e.g., via one of the displays 122 or 124 shown in Figure 19) and the user interacts with the input mechanisms of the offline-payment operated machine 1500 120 (e.g., via the buttons 126 or a touch screen display 124 shown in Figure 19) to perform the operation of the machine. For example, if the offline-payment operated machine 1500 is a dryer, the user of the mobile device 150 selects the appropriate spin cycle via input mechanisms of the dryer, and when the user of the mobile device 150 selects a start/run input mechanism of the dryer, control unit 1506 of the dryer causes initiation of the operation of the dryer (e.g., starting a motor that corresponds to operation unit 1512 in Figure 28A).

[00219] In some implementations, prior to sending the operation information and after causing the offline-payment operated machine to perform the operation by issuing the predefined signal sequence to the control unit, the payment module obtains (1616) a notification from the offline-payment operated machine indicating initiation of the operation of the offline-payment operated machine and the preset number of coins. For example, after issuing the preset signal sequence to control unit 1506, the payment module 1520 (Figure 28A) obtains a notification indicating that the control unit 1506 sent control signals to initiate operation of the offline-payment operated machine 1500 in response to receiving the predefined signal sequence. For example, the notification is obtained by the second interface module 1524 (e.g., the sample 1570, Figure 28B) sampling controls signals sent by control unit 1506 (e.g., application of current to the gate of the transistor 1510 which allows current to flow from the power supply 1508 to operation unit 1512).

[00220] In response to receiving the notification, the payment module (1618): generates the operation information based at least in part on the notification; and stores the

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generated operation information in the memory. For example, after obtaining the notification, the payment module 1520 (Figure 28A) generates operation information corresponding to performance of the operation and the preset number of coins associated with the predefined signal sequence (e.g., the amount required to initiate operation of the offline-payment operated machine 1500) and stores the operation information in memory local to the payment module 1520 (e.g., the memory 760, Figure 20).

[00221] In some implementations, the payment module sends (1620) operation information corresponding to the operation to the respective mobile device via the short-range communication capability. For example, after operation 1618, the payment module 1520 (Figure 28A) sends the operation information to the mobile device 150 via the first communication capability of the mobile device 150 such as a radio/transceiver means for communicating via one or more short-range communication protocols such as BLE, NFC, and/or the like (i.e., a non-persistent communication channel)

[00222] It should be understood that the particular order in which the operations in Figures 29A-29B have been described is merely for example purposes and is not intended to indicate that the described order is the only order in which the operations could be performed. One of ordinary skill in the art would recognize various ways to reorder the operations described herein. Additionally, it should be noted that details of other processes described herein with respect to other methods described herein (e.g., the method 1700 in Figure 30) are also applicable in an analogous manner to the method 1600 described above with respect to Figures 29A-29B.

[00223] Figure 30 illustrates a flowchart diagram of a method 1700 of enabling a payment operated machine to accept electronic payments in accordance with some implementations. In some implementations, the method 1700 is performed by an offline-payment operated machine (e.g., the payment accepting unit 120, Figures 5 and 19 (sometimes also herein called "machine 120"), or the offline-payment operated machine 1500, Figure 28A) such as dryer or washer in a laundromat, a parking meter, a car wash payment kiosk, or the like.

[00224] In some implementations, the offline-payment operated machine includes a control unit (e.g., the control unit 1506, Figure 28A), memory, and a coin receiving switch (e.g., the microswitch 1502, Figure 28A). In some implementations, the offline-payment operated machine also includes a short-range communication capability corresponding to a

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short-range communication protocol (e.g., a non-persistent communication channel such as BLE, NFC, and/or the like), where the short-range communication capability is configured to communicate with one or more mobile devices, where each of the one or more mobile devices is configured with a complimentary short-range communication capability and a long-range communication capability corresponding to a long-range communication protocol (e.g., Wi-Fi, CDMA, GSM, and/or the like). For example, in some implementations, the method 1700 is performed by the machine 120, (Figures 5 and 19). In some implementations, the method 1700 is governed by instructions that are stored in a non-transitory computer readable storage medium and the instructions are executed by the control unit of the offline-payment operated machine.

[00225] The offline-payment operated machine receives (1702) a request via a short-range communication capability from a respective mobile device to perform an operation of the offline-payment operated machine. For example, with reference to Figure 8C, the payment module 1520 (Figure 28A) receives the AuthGrant from the mobile device 150 via the short-range communication capability (e.g., BLE) indicating that the user of the mobile device 150 wishes to perform the operation of the offline-payment operated machine 1500 (Figure 28A). For example with reference to operation 1012 in Figure 23, the payment module 1520 (Figure 28A) receives an authorization grant token from the mobile device 150 via the short-range communication capability (e.g., BLE) indicating that the user of the mobile device 150 wishes to perform the operation of the offline-payment operated machine 1500 (Figure 28A).

[00226] The offline-payment operated machine validates (1704) the request. Validation of the request indicates (1706) that the respective mobile device is authorized to initiate payment for the operation by a remote server via the long-range communication capability. In some implementations, the payment module 1520 validates the request from the mobile device 150 by determining whether the AuthGrant or the authorization grant token includes a valid authorization code.

[00227] In accordance with a determination that the request is valid, the offline-payment operated machine performs (1708) the operation by issuing a predefined signal sequence to the control unit, where the predefined signal sequence emulates a preset number of coins received by the coin receiving switch. For example, in accordance with a determination that the request is valid, the offline-payment operated machine or a component thereof issues a predefined signal sequence to the control unit 1506 that emulates sample

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1550 in Figure 28B. Continuing with this example, in response to receiving the predefined signal sequence from the payment module 1520, control unit 1506 causes initiation of the operation of the offline-payment operated machine 1500 by applying current to the gate of the transistor 1510 which allows current to flow from the power supply 1508 to operation unit 1512. In another example, in accordance with a determination that the request is valid, the control unit 1506 causes initiation of the operation of the offline-payment operated machine 1500 by applying current to the gate of the transistor 1510 which allows current to flow from the power supply 1508 to operation unit 1512.

[00228] It should be understood that the particular order in which the operations in Figure 30 have been described is merely for example purposes and is not intended to indicate that the described order is the only order in which the operations could be performed. One of ordinary skill in the art would recognize various ways to reorder the operations described herein. Additionally, it should be noted that details of other processes described herein with respect to other methods described herein (e.g., the method 1600 in Figures 29A-29B) are also applicable in an analogous manner to the method 1700 described above with respect to Figure 30.

MISCELLANEOUS

[00229] It should be noted that relative terms are meant to help in the understanding of the technology and are not meant to limit the scope of the invention. Similarly, unless specifically stated otherwise, the terms used for labels (e.g., "first," "second," and "third") are meant solely for purposes of designation and not for order or limitation. The term "short" in the phrase "short-range" (in addition to having technology specific meanings) is relative to the term "long" in the phrase "long-range."

[00230] The terms "may," "might," "can," and "could" are used to indicate alternatives and optional features and only should be construed as a limitation if specifically included in the claims.

[00231] It should be noted that, unless otherwise specified, the term "or" is used in its nonexclusive form (e.g., "A or B" includes A, B, A and B, or any combination thereof, but it would not have to include all of these possibilities). It should be noted that, unless otherwise specified, "and/or" is used similarly (e.g., "A and/or B" includes A, B, A and B, or any combination thereof, but it would not have to include all of these possibilities). It should be noted that, unless otherwise specified, the terms "includes" and "has" mean "comprises"

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(e.g., a device that includes, has, or comprises A and B contains A and B, but optionally may contain C or additional components other than A and B). It should be noted that, unless otherwise specified, the singular forms "a," "an," and "the" refer to one or more than one, unless the context clearly dictates otherwise.

[00232] It is to be understood that the inventions, examples, and implementations described herein are not limited to particularly exemplified materials, methods, and/or structures. It is to be understood that the inventions, examples, and implementations described herein are to be considered preferred inventions, examples, and implementations whether specifically identified as such or not.

[00233] The terms and expressions that have been employed in the foregoing specification are used as terms of description and not of limitation, and are not intended to exclude equivalents of the features shown and described. While the above is a complete description of selected implementations of the present invention, it is possible to practice the invention using various alternatives, modifications, adaptations, variations, and/or combinations and their equivalents. It will be appreciated by those of ordinary skill in the art that any arrangement that is calculated to achieve the same purpose may be substituted for the specific embodiment shown. It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention that, as a matter of language, might be said to fall therebetween.

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What is claimed is:

1. A payment module for an offline payment-operated machine including a coin receiving switch, the payment module comprising:

a short-range wireless transceiver configured to communicate with one or more mobile devices;

one or more processors;

a first interface module configured to output to a control unit of the offline payment-operated machine one or more electrical pulses, each of the one or more electrical pulses emulating an analog signal generated by the coin receiving switch of the offline payment-operated machine in response to insertion of a single coin of a predetermined type in the offline payment-operated machine; and

memory with one or more programs for execution by the one or more processors, the one or more programs including instructions for:

receiving a wireless request via the short-range wireless transceiver from a respective mobile device of the one or more mobile devices to initiate a cashless operation of the offline-payment operated machine;

in response to the wireless request:

causing the offline payment-operated machine to initiate the requested cashless operation by issuing a first number of electrical pulses to the control unit via the first interface module; and

sending operation information corresponding to the initiated operation of the offline payment-operated machine to the respective mobile device via the short-range wireless transceiver.

2. The payment module of claim 1, wherein the one or more programs further comprise instructions for:

prior to sending the operation information and after causing the offline payment-operated machine to initiate operation by issuing the first number of electrical pulses to the control unit, obtaining a notification from the offline payment-operated machine indicating initiation of the operation of the offline payment-operated machine; and

in response to receiving the notification:

generating the operation information based at least in part on the notification; and

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storing the generated operation information in the memory of the payment module.

3. The payment module of claim 2, wherein the notification obtained from the offline payment-operated machine includes inventory information.

4. The payment module of claim 2, further comprising a second interface module configured to store control signals from the control unit of the offline payment-operated machine that initiate operation of the offline payment-operated machine; wherein obtaining the notification from the offline payment-operated machine includes sampling the control signals from the control unit via the second interface module.

5. The payment module of claim 1, wherein the offline payment-operated machine is not connected to any networks.

6. The payment module of claim 1, wherein the offline payment-operated machine is a coin-operated laundry machine, a vending machine, or a kiosk.

7. A method for accepting electronic payments at an offline payment-operated machine, the method comprising:

at a payment module with one or more processors, memory, a short-range wireless transceiver configured to communicate with one or more mobile devices, a first interface module configured to output to a control unit of the offline payment-operated machine one or more electrical pulses, each of the one or more electrical pulses emulating an analog signal generated by the coin receiving switch of the offline payment-operated machine in response to insertion of a single coin of a predetermined type in the offline payment-operated machine:

receiving a wireless request via the short-range wireless transceiver from a respective mobile device of the one or more mobile devices to initiate a cashless operation of the offline-payment operated machine;

in response to the wireless request:

causing the offline payment-operated machine to initiate the requested cashless operation by issuing a first number of electrical pulses to the control unit via the first interface module; and

sending operation information corresponding to the initiated operation of the offline payment-operated machine to the respective mobile device via the short-range wireless transceiver.

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8. The method of claim 7, further comprising:

prior to sending the operation information and after causing the offline payment-operated machine to initiate operation by issuing the first number of electrical pulses to the control unit, obtaining a notification from the offline payment-operated machine indicating initiation of the operation of the offline payment-operated machine; and

in response to receiving the notification:

generating the operation information based at least in part on the notification; and

storing the generated operation information in the memory of the payment module.

9. The method of claim 8, wherein the notification obtained from the offline payment-operated machine includes inventory information.

10. The method of claim 8, wherein the payment module includes a second interface module configured to sample control signals from the control unit of the offline payment-operated machine that initiate operation of the offline payment-operated and obtaining the notification from the offline payment-operated machine includes sampling control signals from the control unit via the second interface module.

11. The method of claim 7, wherein the offline payment-operated machine is not connected to any networks.

12. The method of claim 7, wherein the offline payment-operated machine is a coin-operated laundry machine, a vending machine, or a kiosk.

13. An offline payment-operated machine, comprising:

a coin receiving switch that generates analog signals in response to insertion of a single coin of a predetermined type in the offline payment-operated machine;

a control unit; and

a payment module that includes:

a short-range wireless transceiver configured to communicate with one or more mobile devices;

one or more processors;

a first interface module configured to output to a control unit of the offline payment-operated machine one or more electrical pulses, each of the one or more electrical

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pulses emulating an analog signal generated by the coin receiving switch of the offline payment-operated machine in response to insertion of a single coin of a predetermined type in the offline payment-operated machine; and

memory storing one or more programs to be executed by the one or more processors, the one or more programs comprising instructions for:

receiving a wireless request via the short-range wireless transceiver from a respective mobile device of the one or more mobile devices to initiate a cashless operation of the offline-payment operated machine;

in response to the wireless request:

causing the offline payment-operated machine to initiate the requested cashless operation by issuing a first number of electrical pulses to the control unit via the first interface module; and

sending operation information corresponding to the initiated operation of the offline payment-operated machine to the respective mobile device via the short-range wireless transceiver.

14. The offline payment-operated machine of claim 13, wherein the one or more programs further comprise instructions for:

prior to sending the operation information and after causing the offline payment-operated machine to initiate operation by issuing the first number of electrical pulses to the control unit, obtaining a notification from the offline payment-operated machine indicating initiation of the operation of the offline payment-operated machine; and

in response to receiving the notification:

generating the operation information based at least in part on the notification; and

storing the generated operation information in the memory of the payment module.

15. The offline payment-operated machine of claim 14, wherein the notification obtained from the offline payment-operated machine includes inventory information.

16. The offline payment-operated machine of claim 14, further comprising a second interface module configured to sample control signals from the control unit of the offline payment-operated machine that initiate operation of the offline payment-operated machine;

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wherein obtaining the notification from the offline payment-operated machine includes sampling the control signals from the control unit via the second interface module.

17. The offline payment-operated machine of claim 13, wherein the offline payment-operated machine is not connected to any networks.

18. The offline payment-operated machine of claim 13, wherein the offline payment-operated machine is a coin-operated laundry machine, a vending machine, or a kiosk.

19. A payment module for an offline payment-operated machine including a coin receiving switch, the payment module comprising:

a short-range wireless transceiver configured to communicate with one or more mobile devices;

one or more processors;

a first interface module configured to communicate with a control unit of the offline payment-operated machine using a serial interface to send one or more commands to the control unit;

a second interface module configured to count one or more electrical pulses generated by the coin receiving switch of the offline payment-operated machine in response to the insertion of a single coin of a predetermined type in the offline payment-operated machine and to store an output of the control unit corresponding to an operation of the offline payment-operated machine; and

memory with one or more programs for execution by the one or more processors, the one or more programs including instructions for:

receiving a wireless request via the short-range wireless transceiver from a respective mobile device of the one or more mobile devices to initiate a cashless operation of the offline-payment operated machine;

in response to the wireless request:

causing the offline payment-operated machine to initiate the requested cashless operation by issuing a first command to the control unit via the first interface module; and

sending operation information corresponding to the initiated operation of the offline payment-operated machine to the respective mobile device via the short-range wireless transceiver, the operation information including a value of the requested cashless operation corresponding to a number of coin insertions associated with a total number of the

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pulses counted by the second interface module to initiate the operation of the offline payment-operated machine.

20. The payment module of claim 19, wherein the one or more programs further comprise instructions for:

prior to sending the operation information and after causing the offline payment-operated machine to initiate operation by issuing the first command to the control unit, obtaining a notification from the offline payment-operated machine indicating initiation of the operation of the offline payment-operated machine; and

in response to receiving the notification:

generating the operation information based at least in part on the notification; and

storing the generated operation information in the memory of the payment module.

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METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS

ABSTRACT OF THE DISCLOSURE

A payment module with one or more processors, memory, a short-range communication capability (e.g., BLE), a first interface module configured to output to a control unit of the offline payment-operated machine one or more electrical pulses, each of the one or more electrical pulses emulating an analog signal generated by the coin receiving switch of the offline payment-operated machine in response to insertion of a single coin of a predetermined type in the offline payment-operated machine, and a second interface module configured to sample control signals from the control unit of the offline payment-operated machine that initiate operation of the offline payment-operated machine, receives a wireless request via the short-range wireless transceiver from a respective mobile device of the one or more mobile devices to initiate a cashless operation of the offline-payment operated machine. In response to the wireless request, the payment module causes the offline payment-operated machine to initiate the requested cashless operation by issuing a first number of electrical pulses to the control unit via the first interface module. Further, in response to the wireless request, the payment module sends operation information corresponding to the initiated operation of the offline payment-operated machine to the respective mobile device via the short-range wireless transceiver.

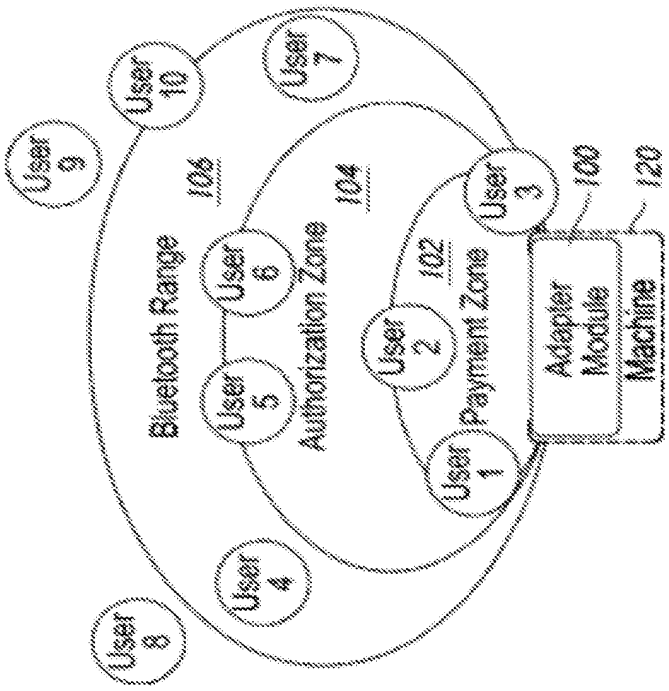


Figure 2

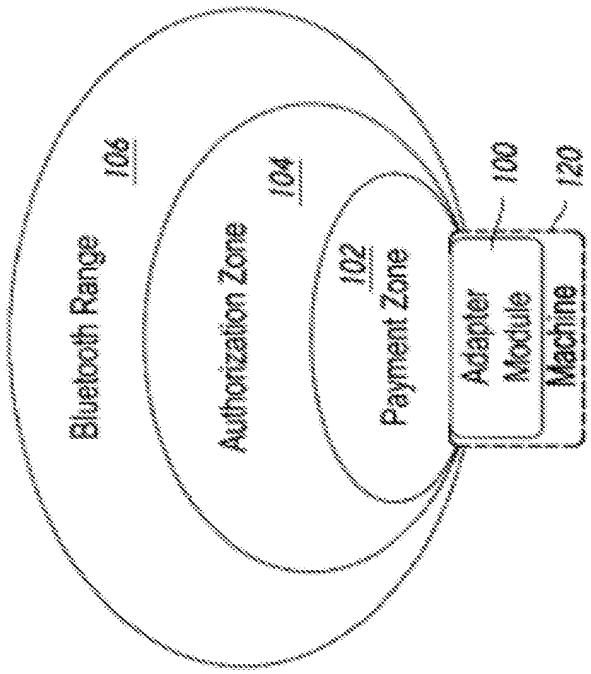


Figure 1

Tab	Favorite?	Alert	View to User
All	Yes	No	User can make Hands-free Credit with the connected vending machine
All	No	Yes	User needs to launch Mobile Device and then swipe to make transaction manually
Favorite	Yes	No	Hands-free transction will be available to the user via vending machine
Favorite	No	No	User is not alerted for the vending machine which is not a favorite machine. Hands-free mode will not work, manual swipe for transaction required by user.
Either All or Favorite	Yes	Yes	BUT Hands-free Credit is not available (disabled by module, expired AuthGrant, insufficient balance, or other issue), then user will get an alert so that user can swipe credit manually.

Figure 3

Figure 4

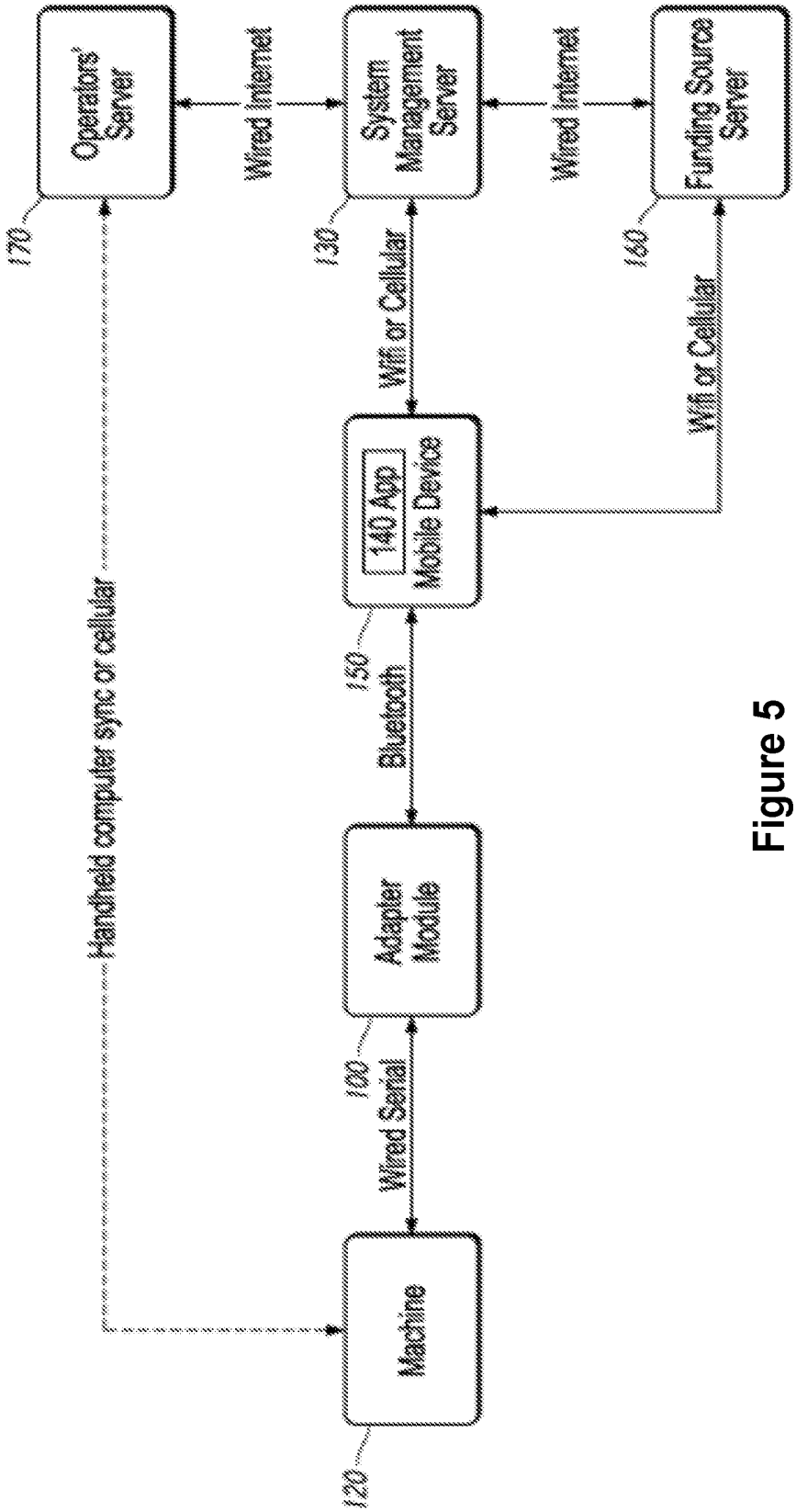

Operators' Server
170
Wired Internet
System Management Server
130
Wired Internet
Funding Source Server
160
Handheld computer sync or cellular
Wifi or Cellular
Wifi or Cellular
140 App
Mobile Device
150
Bluetooth
Adapter Module
100
Wired Serial
Machine
120

Figure 5

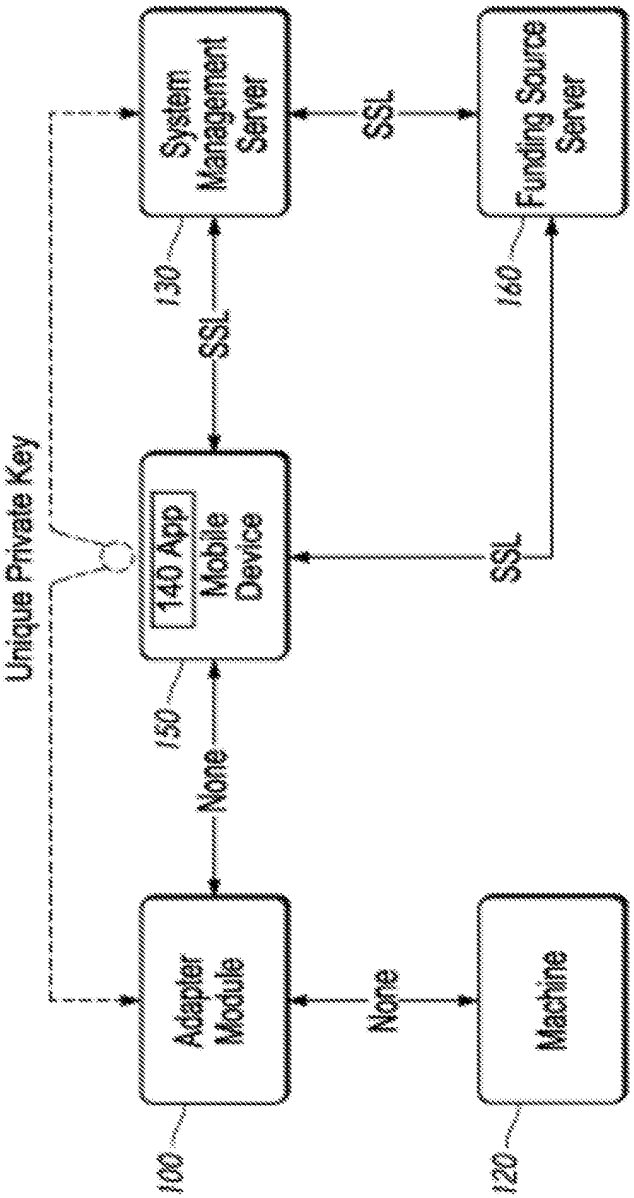

System Management Server
Funding Source Server
SSL
SSL
130
160
Unique Private Key
140 App
Mobile Device
150
SSL
None
Adapter Module
None
Machine
100
120

Figure 6

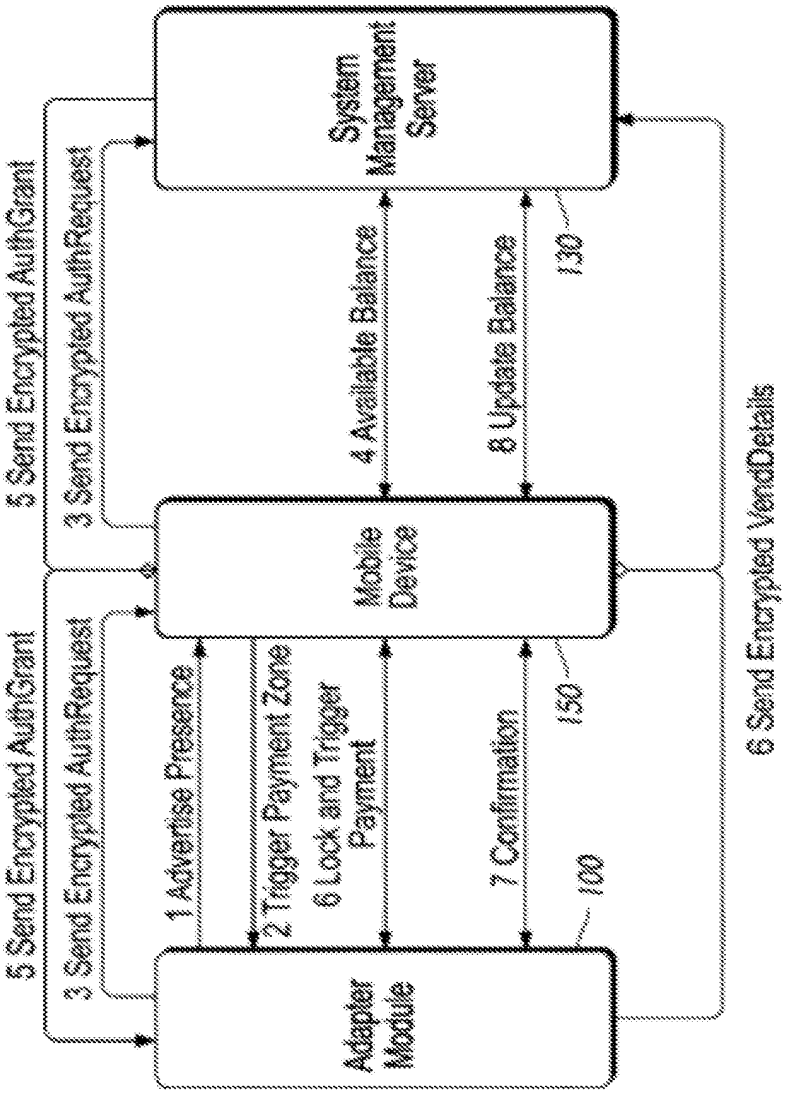

System Management Server
Mobile Device
Adapter Module
5 Send Encrypted AuthGrant
3 Send Encrypted AuthRequest
1 Advertise Presence
2 Trigger Payment Zone
6 Lock and Trigger Payment
7 Confirmation
4 Available Balance
8 Update Balance
130
150
100
6 Send Encrypted VendDetails

Figure 7

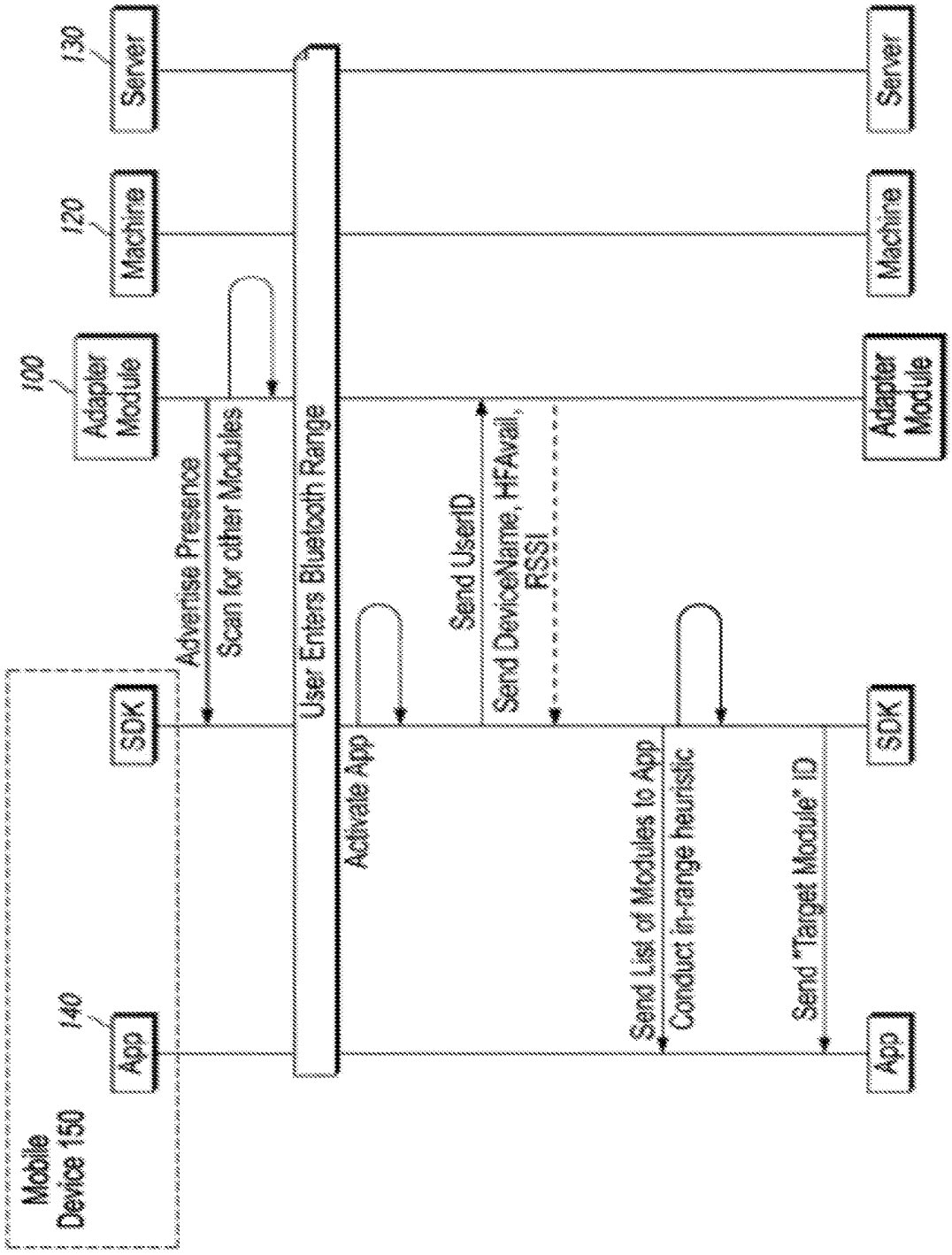

Mobile Device 150
140
App
SDK
100
Adapter Module
120
Machine
130
Server
Advertise Presence
Scan for other Modules
User Enters Bluetooth Range
Activate App
Send UserID
Send DeviceName, HF Avail, RSSI
Send List of Modules to App
Conduct in-range heuristic
Send "Target Module" ID
SDK
Adapter Module
Machine
Server
App

Figure 8A

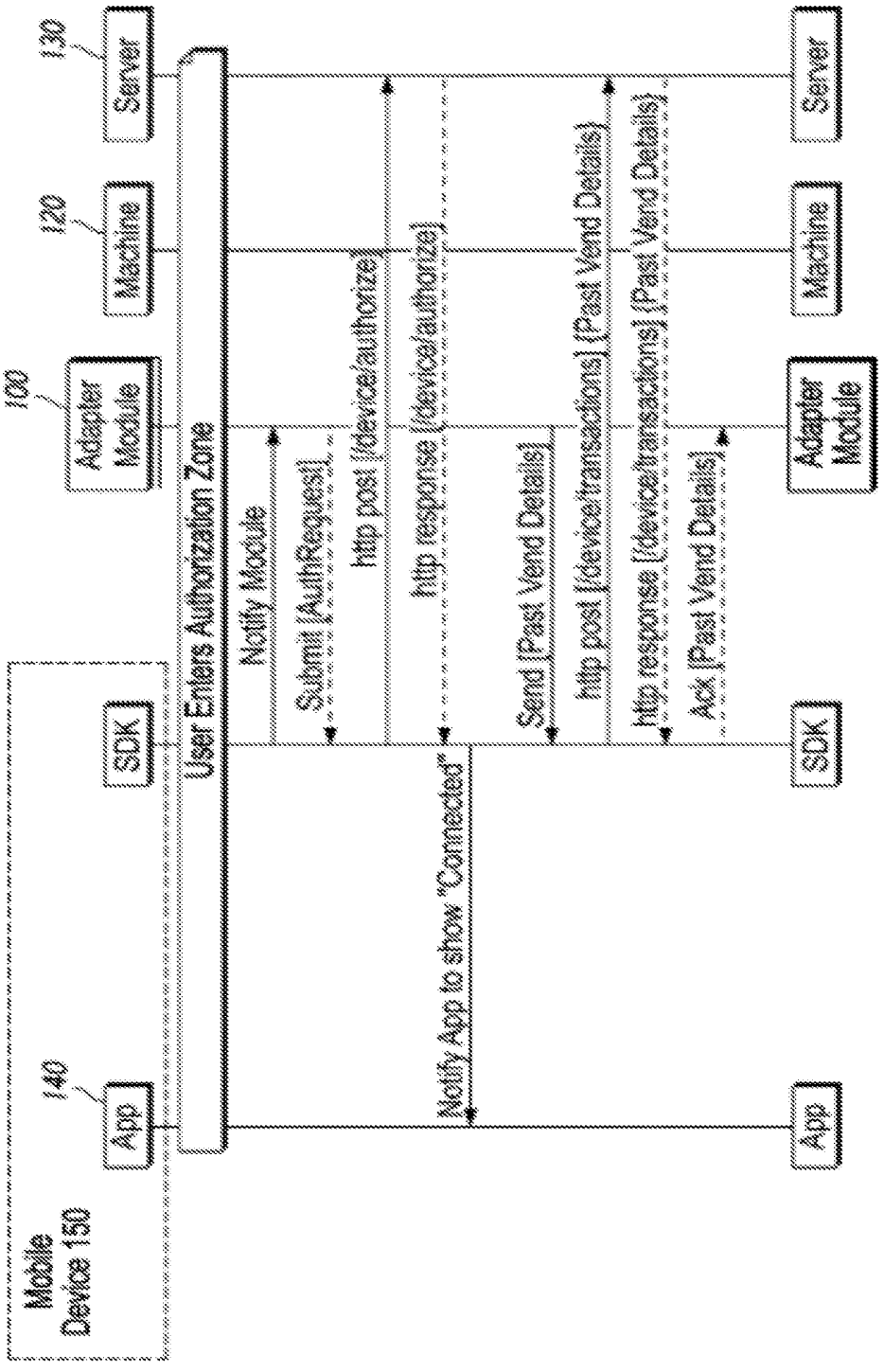

Mobile Device 150
140
App
SDK
100
Adapter Module
120
Machine
130
Server
User Enters Authorization Zone
Notify Module
Submit [AuthRequest]
http post [/device/authorize]
http response [/device/authorize]
Send [Past Vend Details]
http post [/device/transactions] [Past Vend Details]
http response [/device/transactions] [Past Vend Details]
Ack [Past Vend Details]
Notify App to show "Connected"
App
SDK
Adapter Module
Machine
Server

Figure 8B

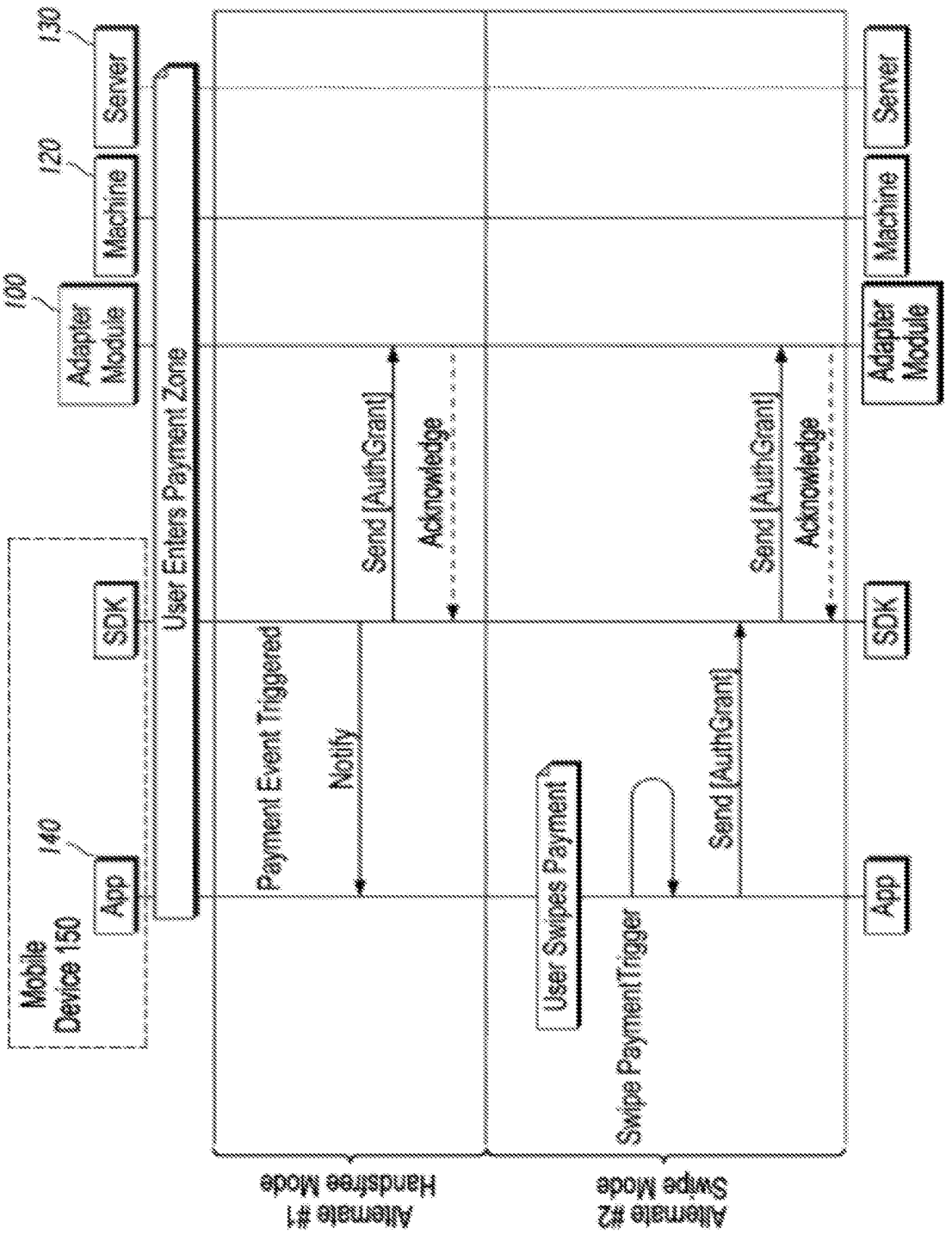

Mobile Device 150
140
App
SDK
100
Adapter Module
120
Machine
130
Server
User Enters Payment Zone
Payment Event Triggered
Notify
Send [AuthGrant]
Acknowledge
User Swipes Payment
Swipe PaymentTrigger
Send [AuthGrant]
Send [AuthGrant]
Acknowledge
Alternate #1 Handsfree Mode
Alternate #2 Swipe Mode

Figure 8C

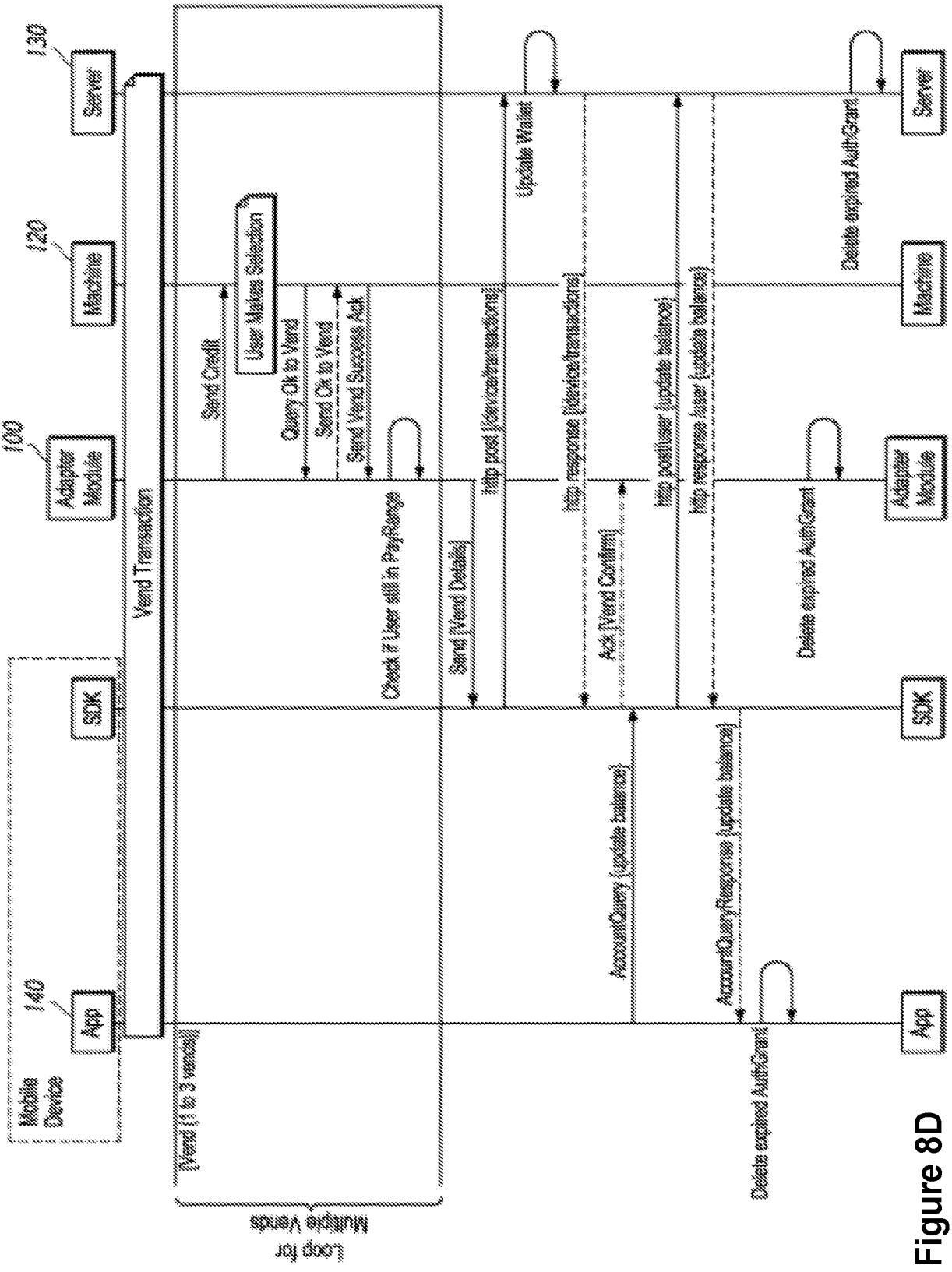

Mobile Device
App
SDK
Adapter Module
Machine
Server
Vend Transaction
Send Credit
User Makes Selection
Query Ok to Vend
Send Ok to Vend
Send Vend Success Ack
Check if User still in Proximity
Send [Vend Details]
http post [VendorTransactions]
Update Wallet
http response [DeviceTransactions]
Ack [Vend Confirm]
http post/user [update balance]
http response /user [update balance]
Delete expired AuthGrant
AccountQuery [update balance]
AccountQueryResponse [update balance]
Delete expired AuthGrant
[Vend (1 to 3 vends)]
Loop for Multiple Vends

Figure 8D

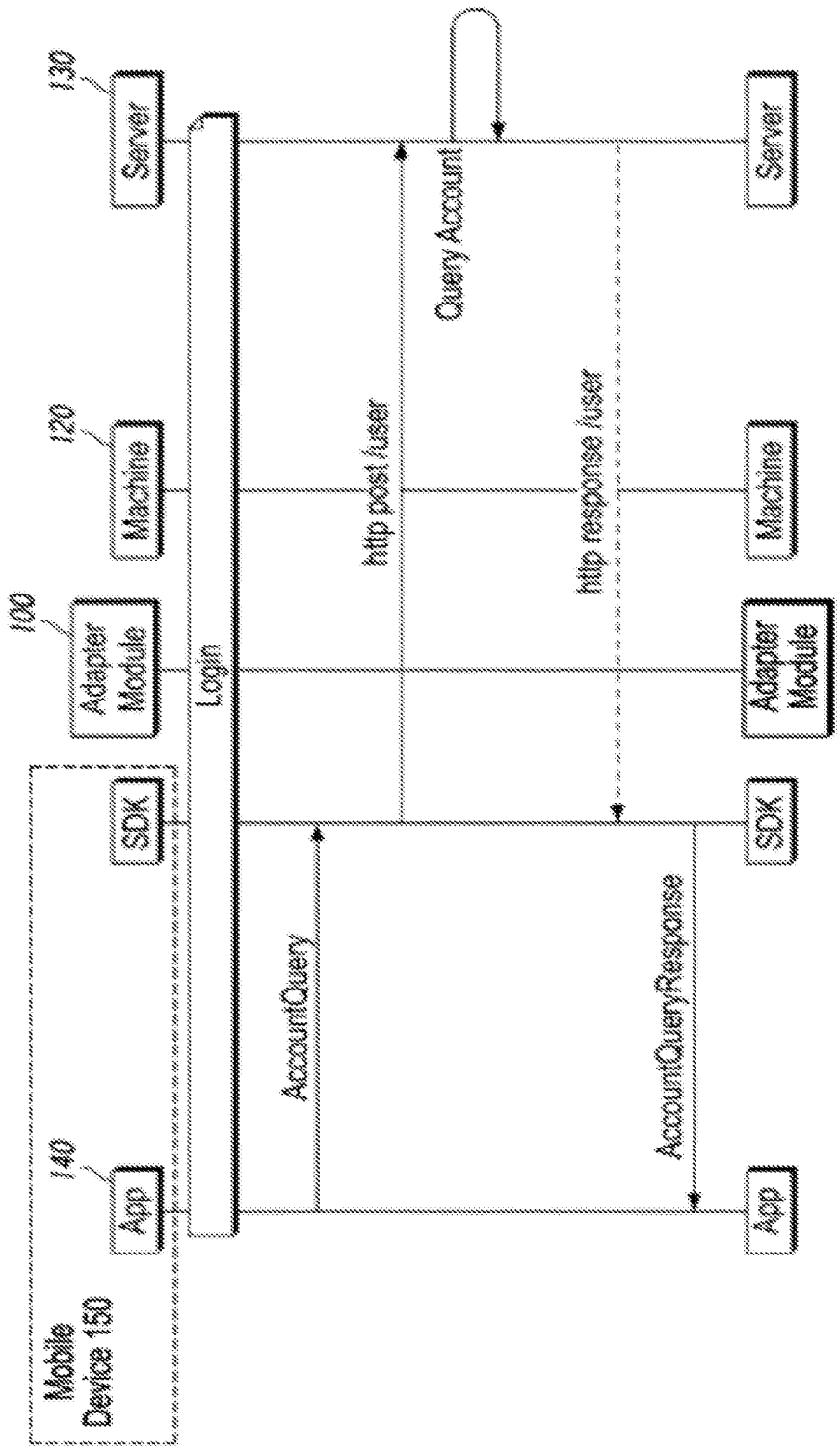

Mobile Device 150
App
140
SDK
Adapter Module
100
Machine
120
Server
130
Login
AccountQuery
http post /user
Query Account
http response /user
AccountQueryResponse
SDK
Adapter Module
Machine
Server
App

Figure 8E

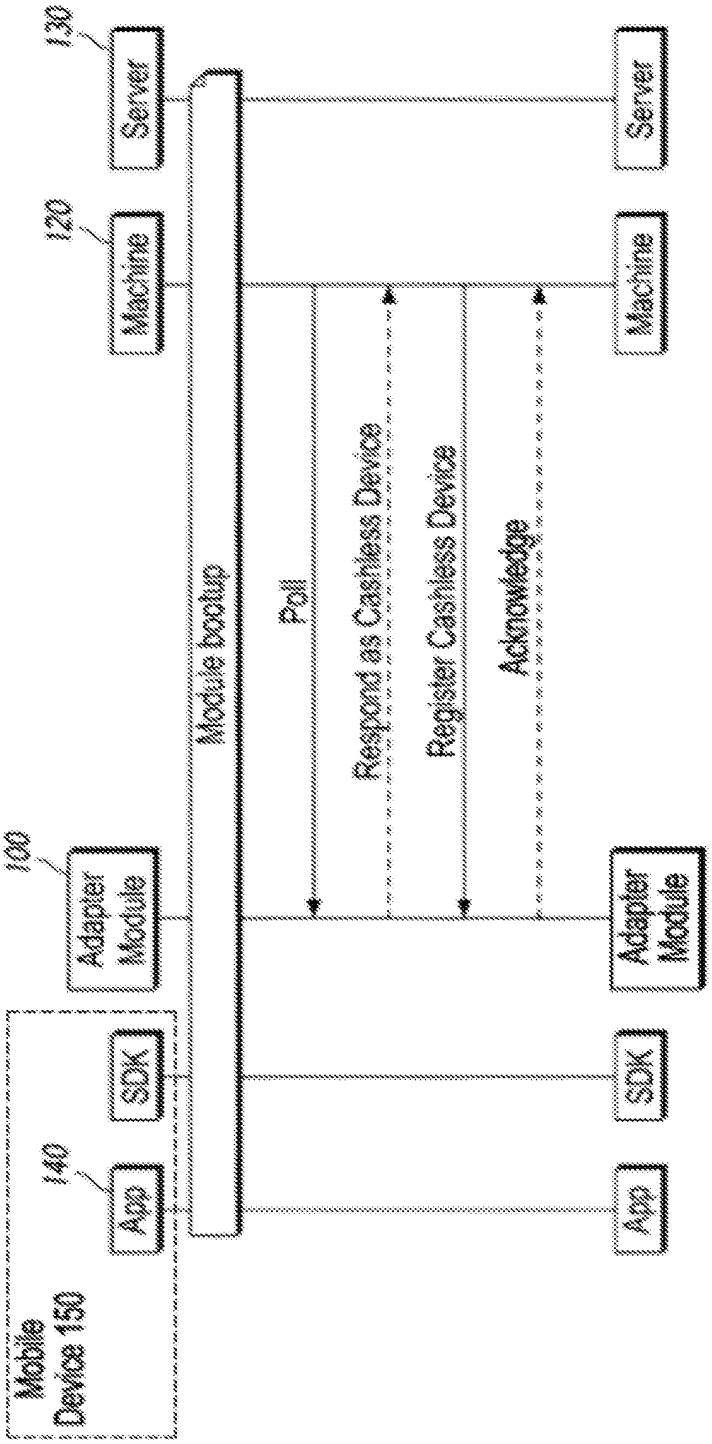

130
Server
120
Machine
100
Adapter Module
Mobile Device 150
SDK
140
App
Module bootup
Poll
Respond as Cashless Device
Register Cashless Device
Acknowledge
Server
Machine
Adapter Module
SDK
App

Figure 8F

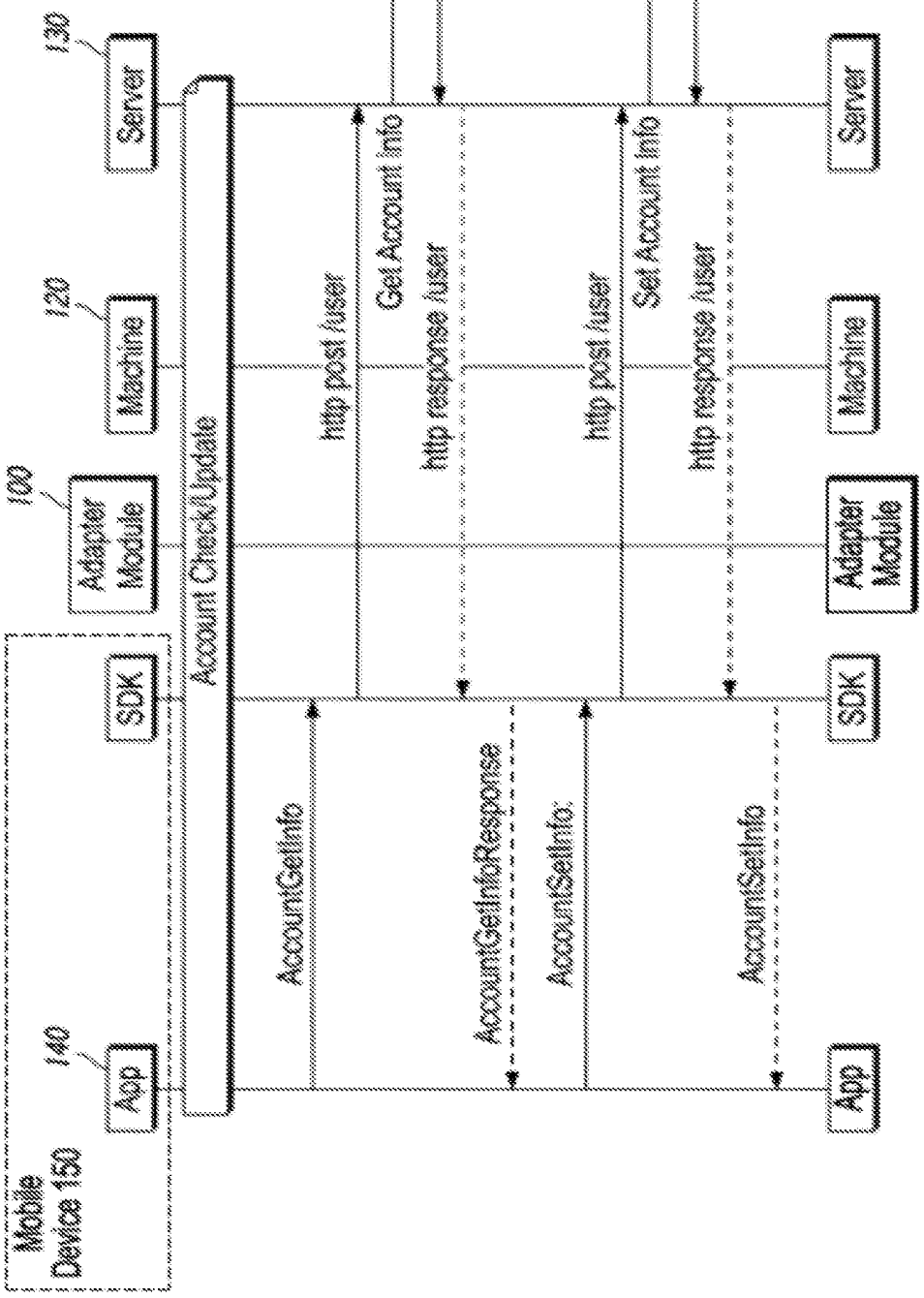

Mobile Device 150
140
App
SDK
100
Adapter Module
120
Machine
130
Server
Account Check/Update
AccountGetInfo
http post /user
Get Account info
http response /user
AccountGetInfoResponse
AccountSetInfo
http post /user
Set Account info
http response /user
AccountSetInfo
SDK
Adapter Module
Machine
Server
App

Figure 8G

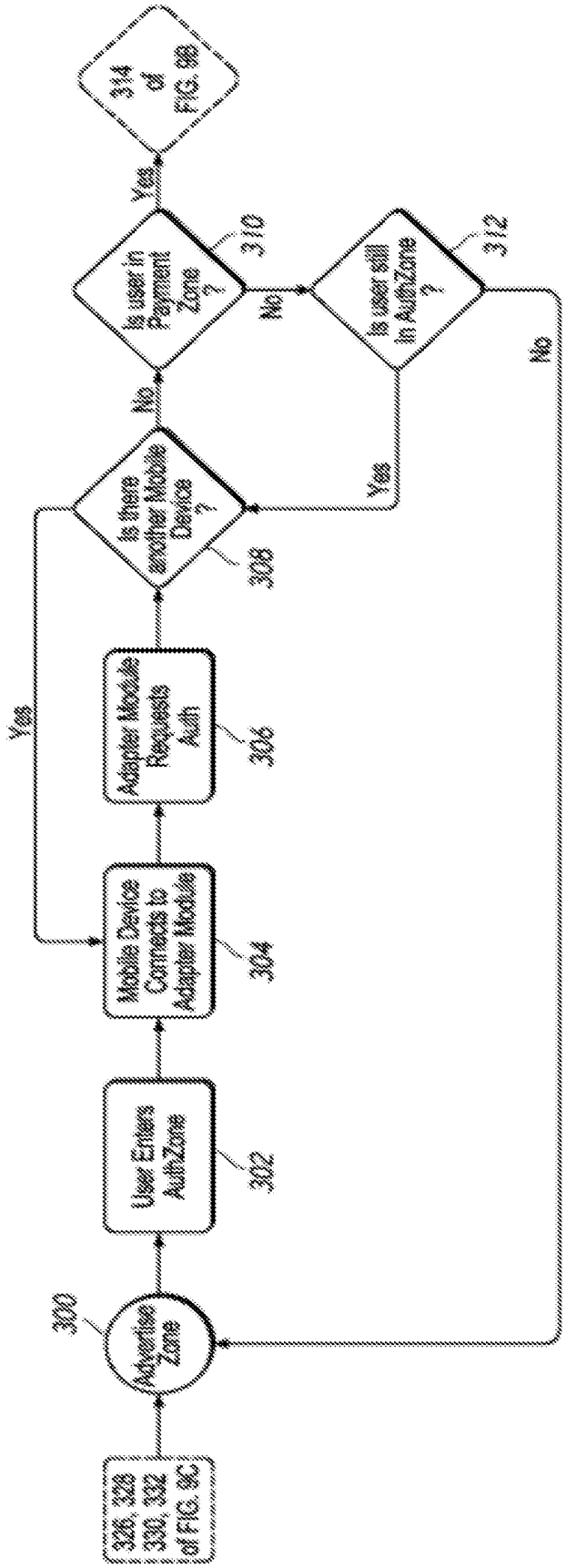

326, 328 330, 332 of FIG. 9C
300
Advertise Zone
User Enters AuthZone
302
Mobile Device Connects to Adapter Module
304
Adapter Module Requests Auth
306
Is there another Mobile Device ?
308
Is user in Payment Zone ?
310
Is user still in AuthZone ?
312
314 of FIG. 9B
Yes
No
Yes
No
Yes
No

Figure 9A

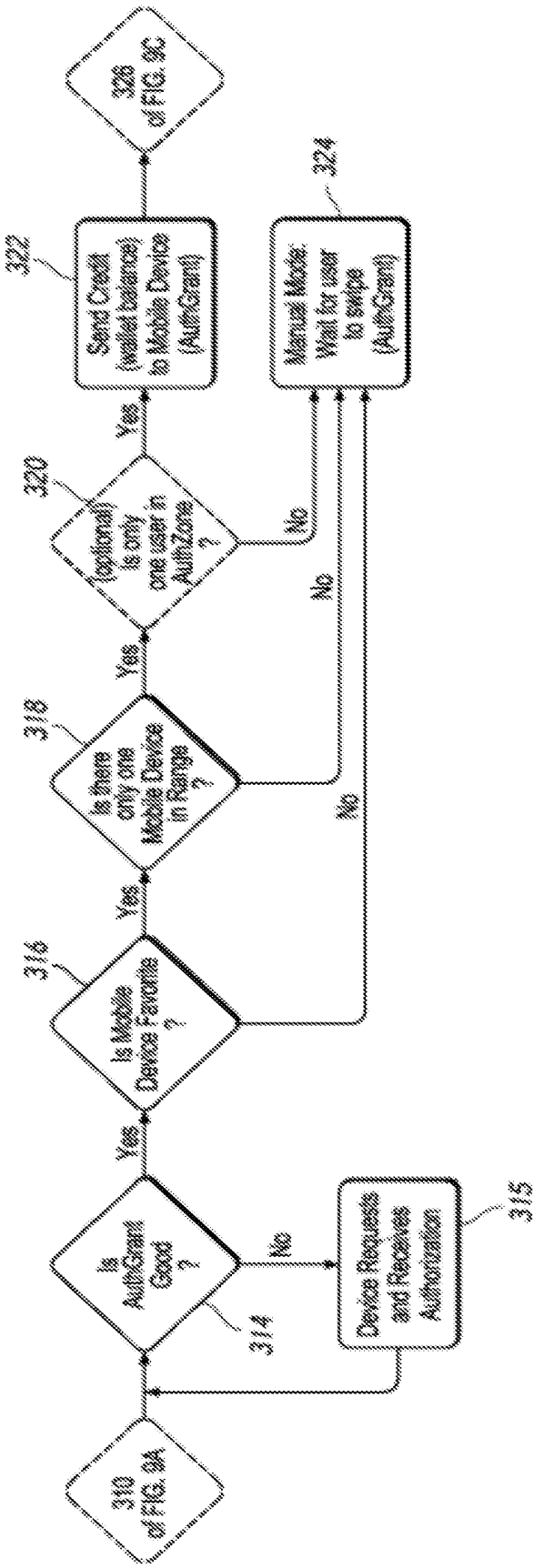
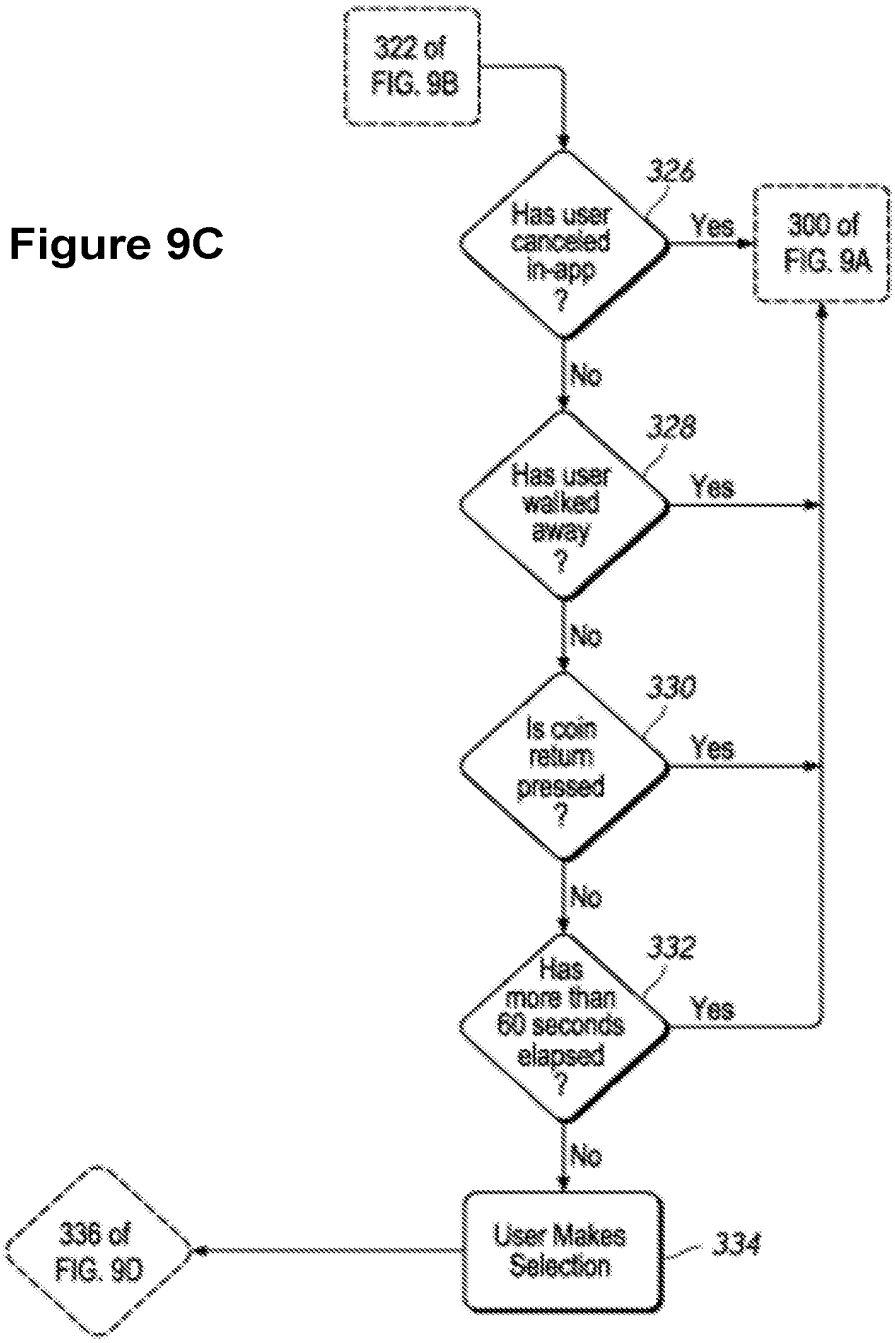

310 of FIG. 9A
Is AuthGrant Good ?
314
No
Device Requests and Receives Authorization
315
Yes
316
Is Mobile Device Favorite ?
No
Yes
318
Is there only one Mobile Device in Range ?
No
Yes
320
(optional) Is only one user in AuthZone ?
No
Yes
322
Send Credit (wallet balance) to Mobile Device (AuthGrant)
324
Manual Mode: Wait for user to swipe (AuthGrant)
326 of FIG. 9C

Figure 9B

Figure 9C


322 of FIG. 9B
326
Has user canceled in-app ?
Yes
300 of FIG. 9A
No
328
Has user walked away ?
Yes
No
330
Is coin return pressed ?
Yes
No
332
Has more than 60 seconds elapsed ?
Yes
No
User Makes Selection
334
336 of FIG. 9D

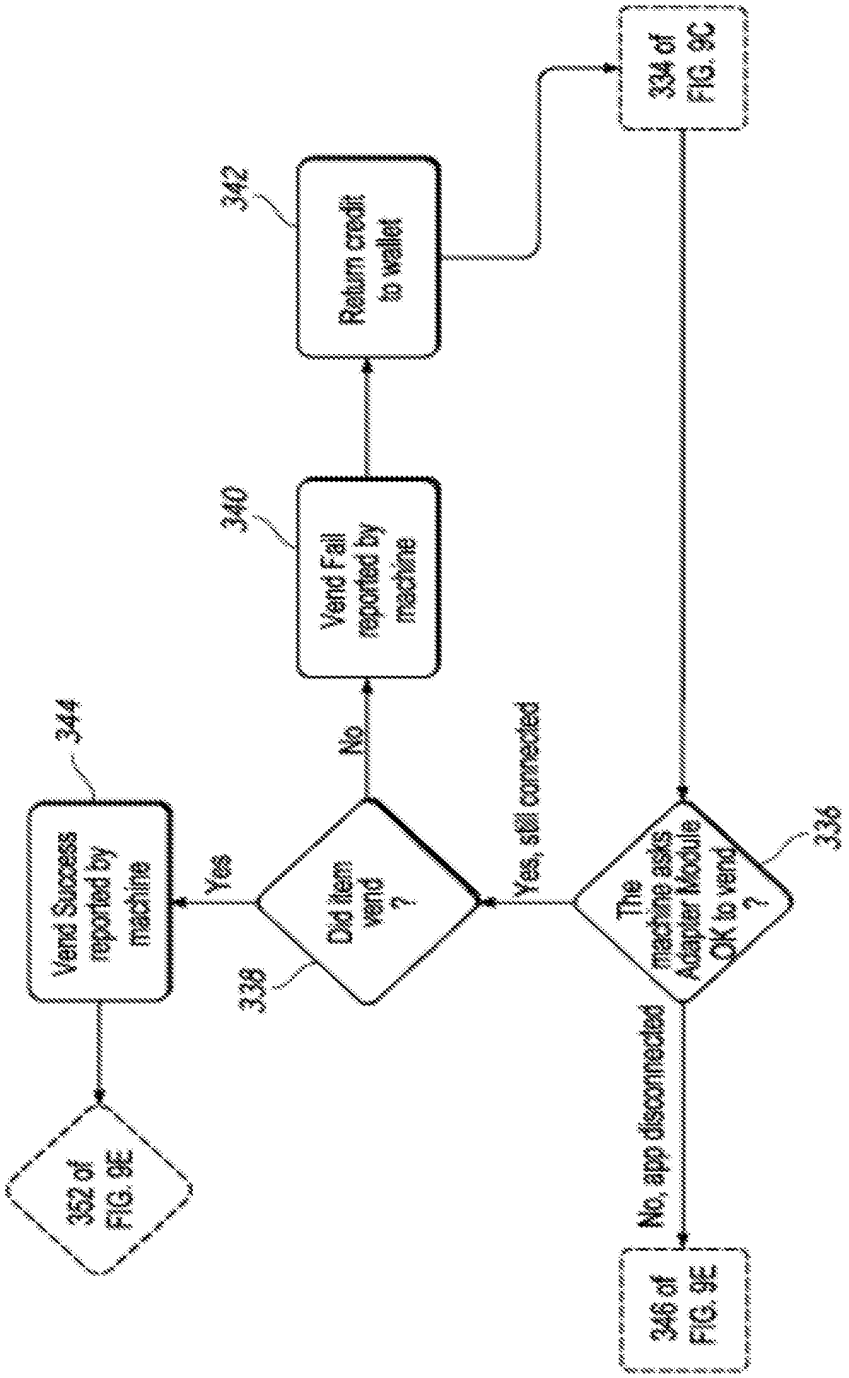

334 of FIG. 9C
342
Return credit to wallet
340
Vend Fail reported by machine
344
Vend Success reported by machine
Yes
No
338
Did item vend ?
Yes, still connected
The machine asks Adapter Module OK to vend ?
336
352 of FIG. 9E
No, app disconnected
346 of FIG. 9E

Figure 9D

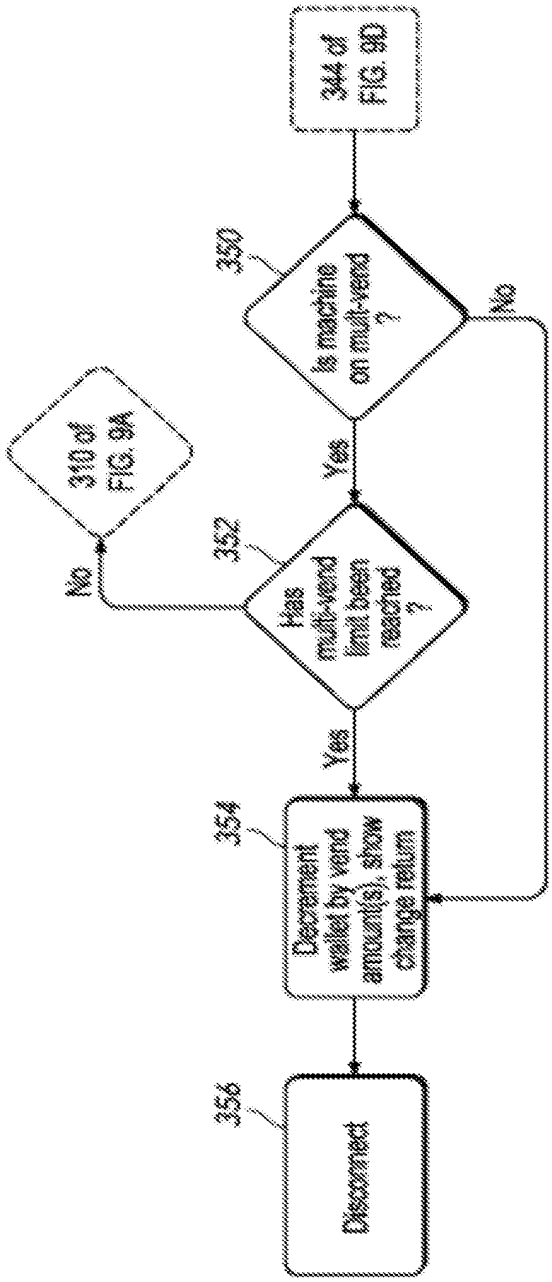

344 of FIG. 9D
350
Is machine on multi-vend ?
No
Yes
310 of FIG. 9A
No
352
Has multi-vend limit been reached ?
Yes
354
Decrement valled by vend amount(s), show change return
356
Disconnect

Figure 9E

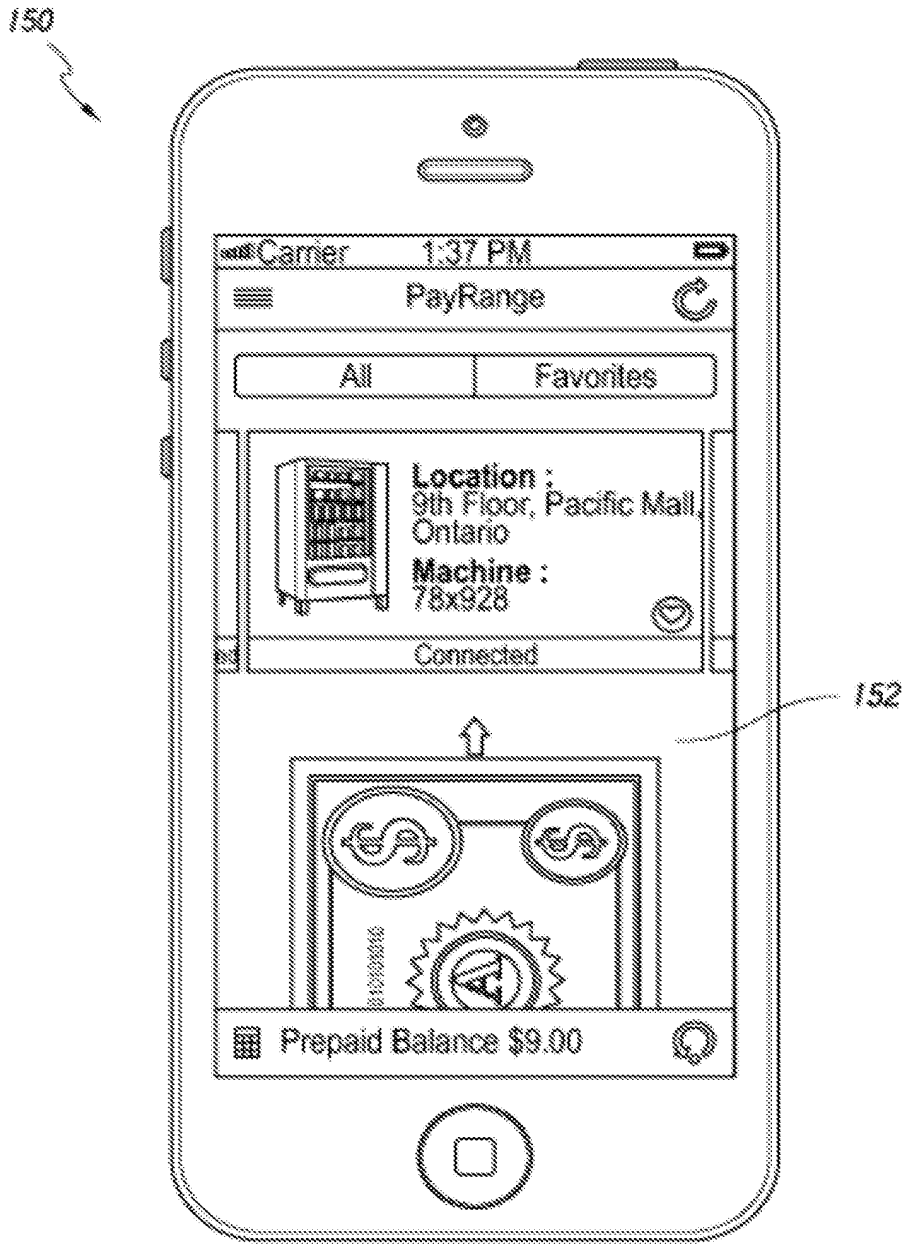

150
Carrier 1:37 PM
PayRange
All
Favorites
Location :
9th Floor, Pacific Mall,
Ontario
Machine :
78x928
Connected
152
Prepaid Balance $9.00

Figure 10A

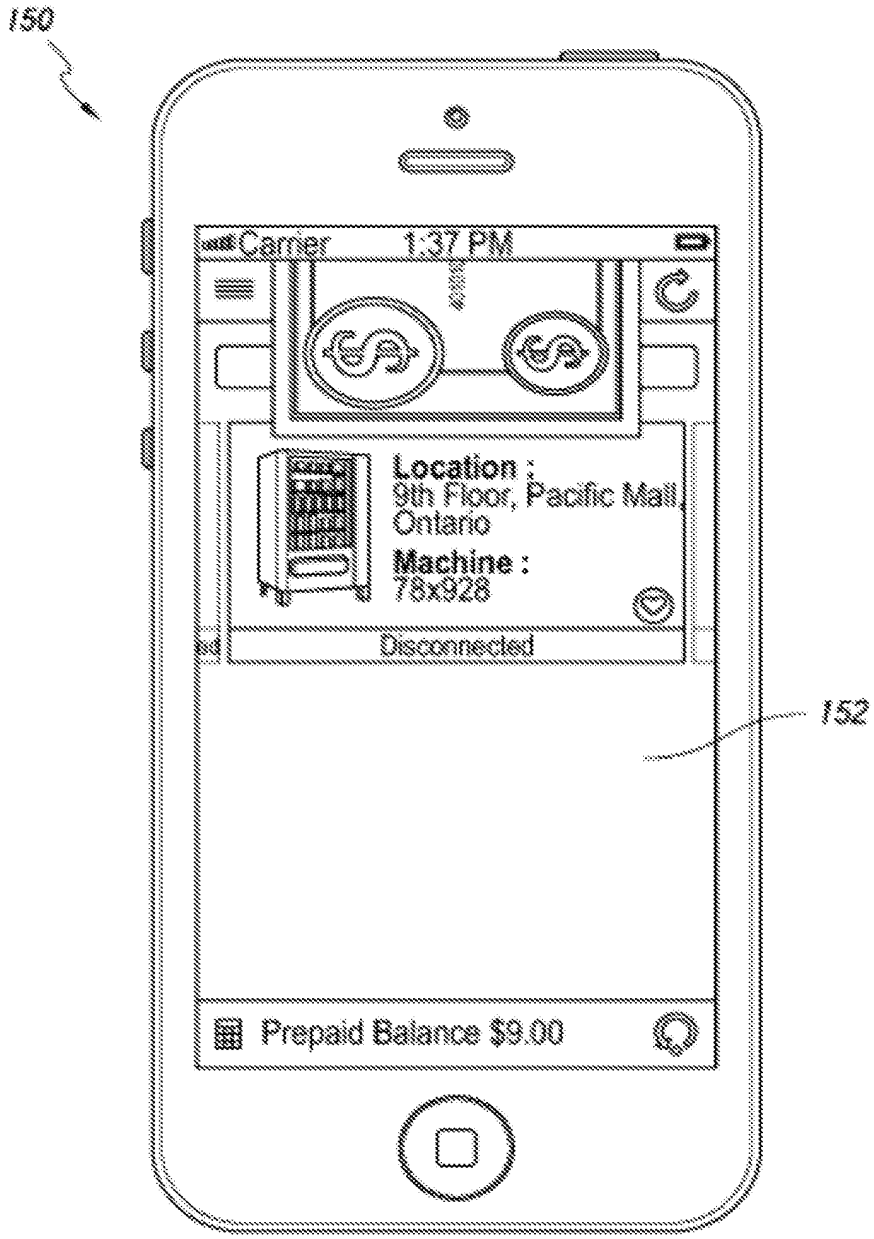

150
Carrier
1:37 PM
Location :
9th Floor, Pacific Mall,
Ontario
Machine :
78x928
Disconnected
152
Prepaid Balance $9.00

Figure 10B

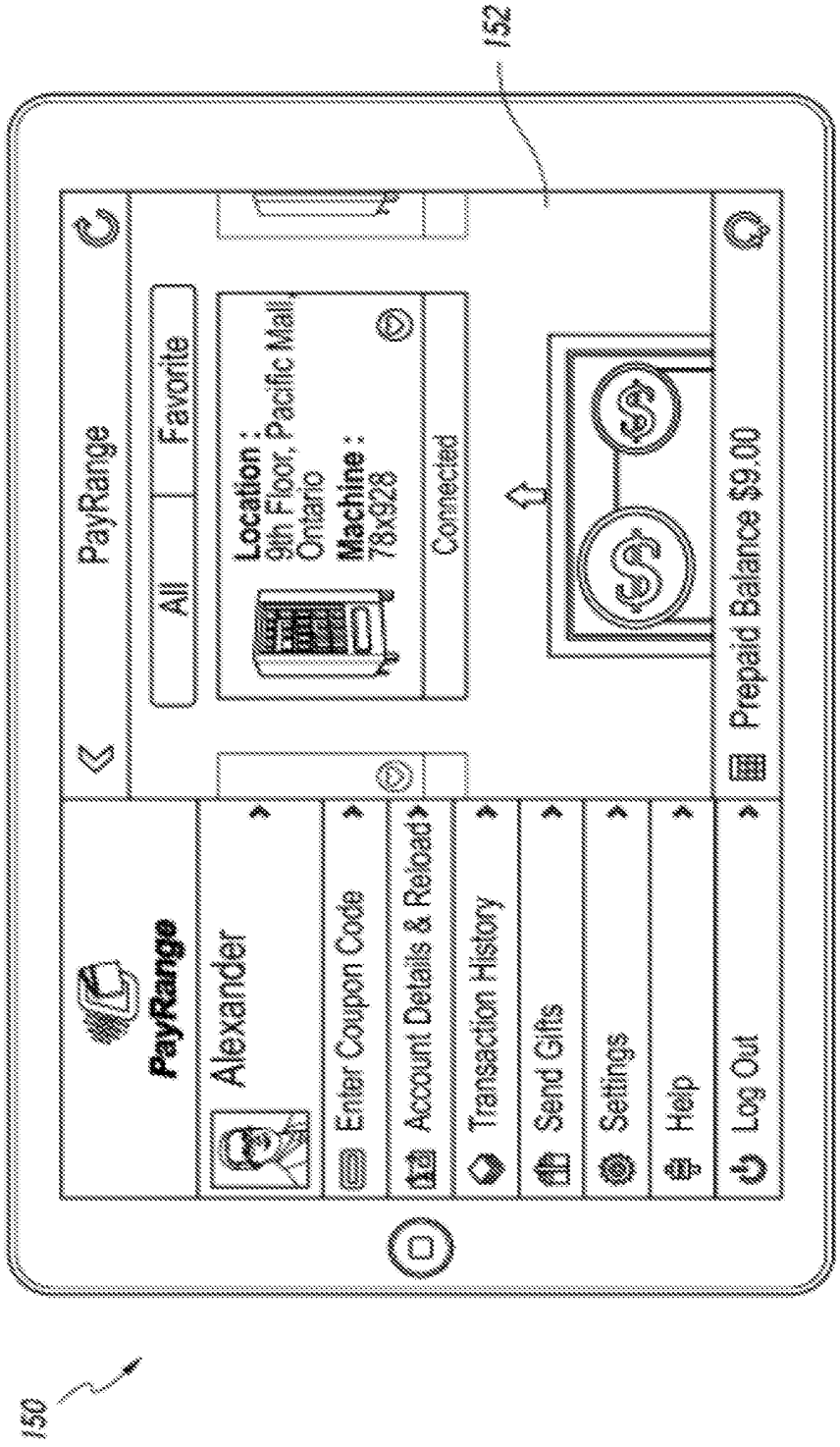

150
152
PayRange
Alexander
Enter Coupon Code
Account Details & Reload
Transaction History
Send Gifts
Settings
Help
Log Out
PayRange
All
Favorite
Location :
9th Floor, Pacific Mall,
Ontario
Machine :
78x828
Connected
Prepaid Balance $9.00

Figure 10C

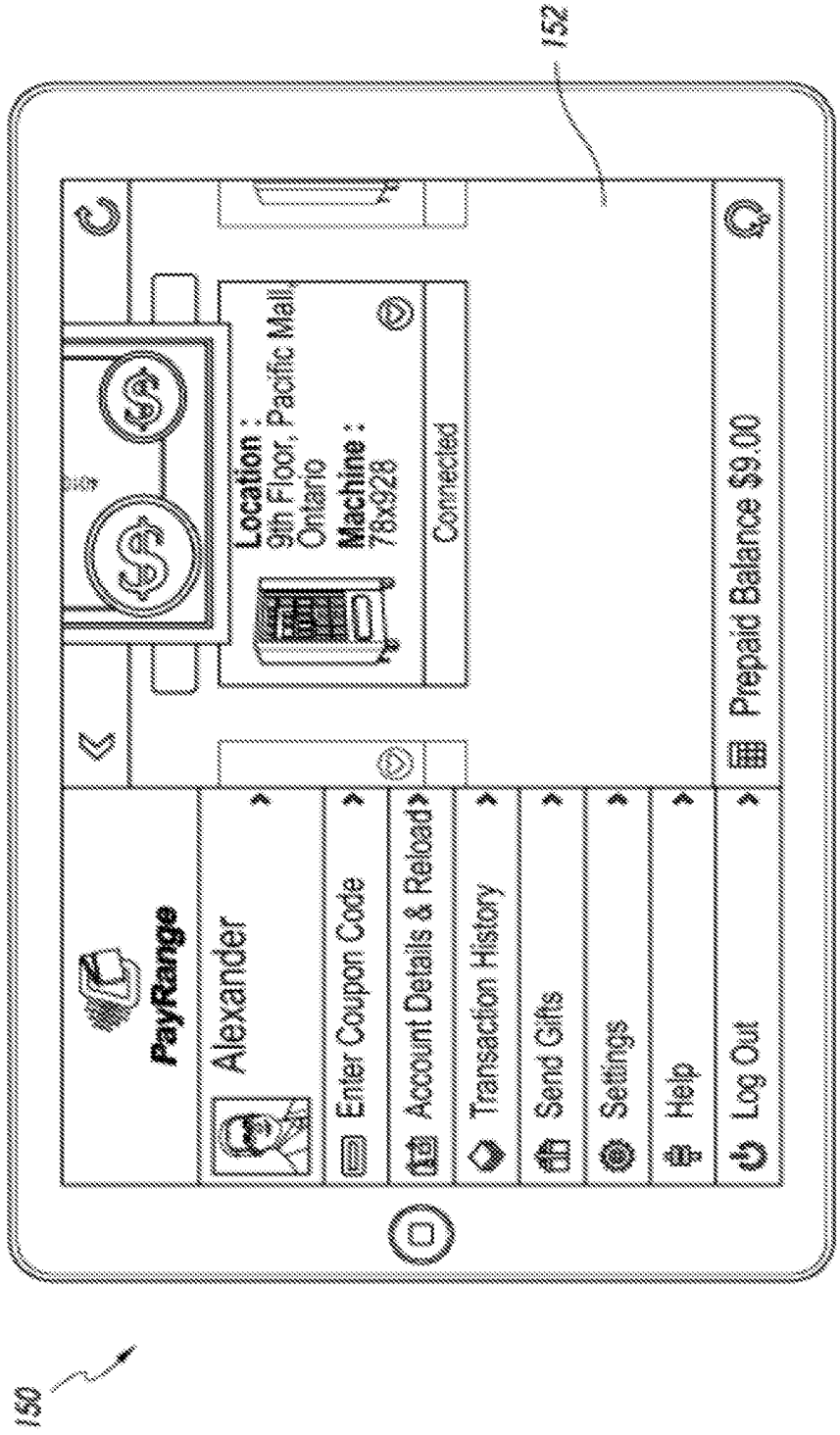

150
152
PayRange
Alexander
Enter Coupon Code
Account Details & Reload
Transaction History
Send Gifts
Settings
Help
Log Out
Location :
9th Floor, Pacific Mall
Ontario
Machine :
78x928
Connected
Prepaid Balance $9.00

Figure 10D

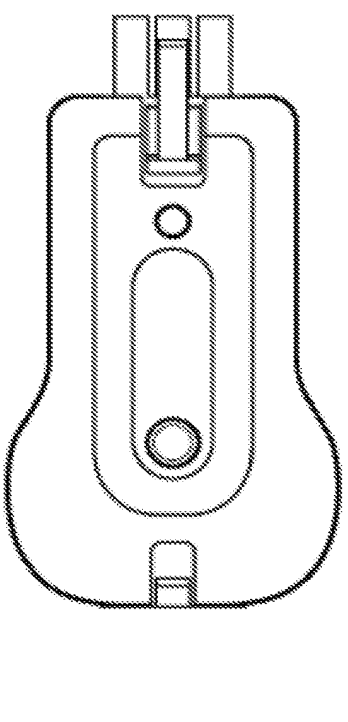


Figure 12

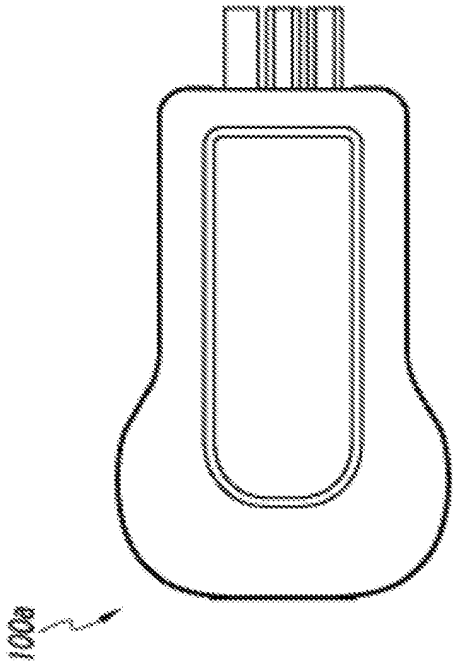


Figure 13

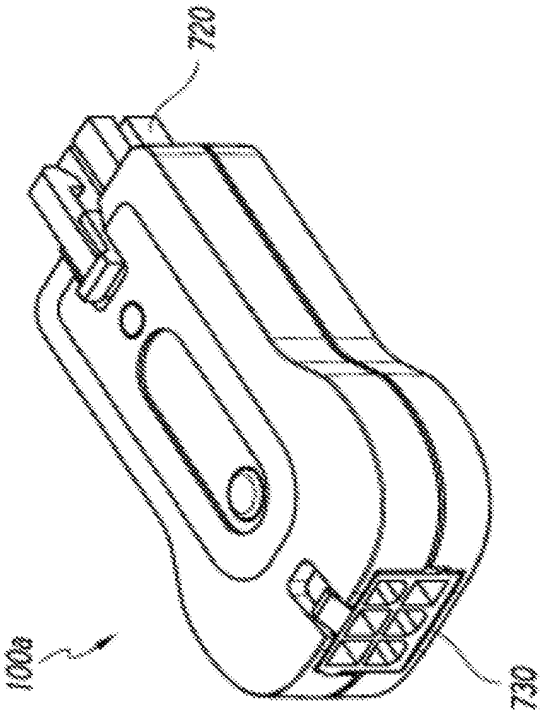


Figure 11

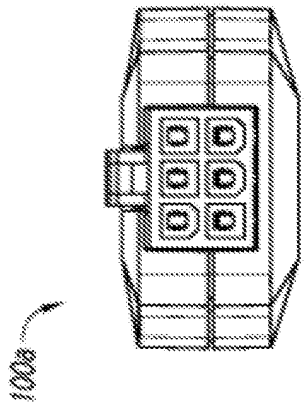


Figure 16

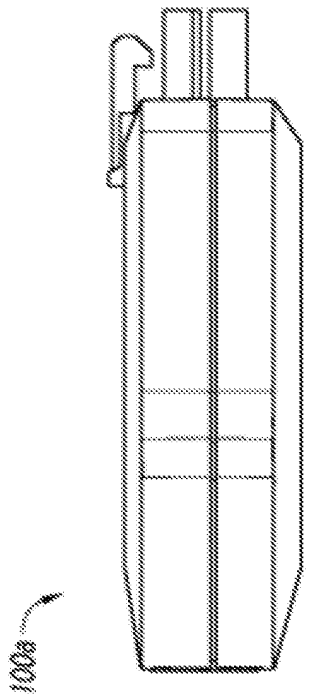


Figure 14

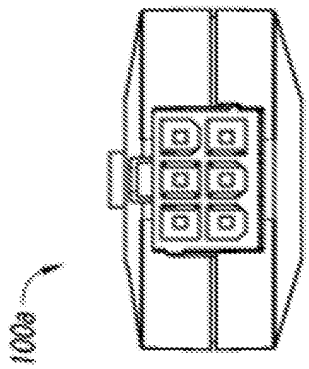


Figure 15

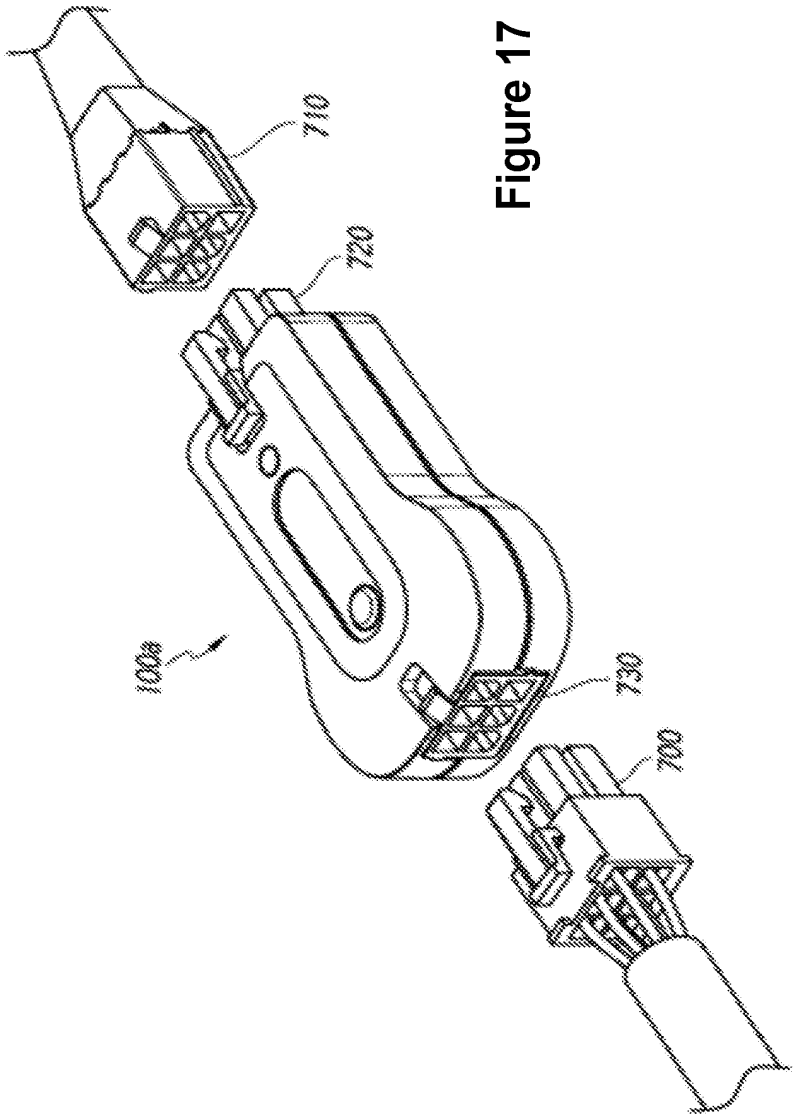


Figure 17

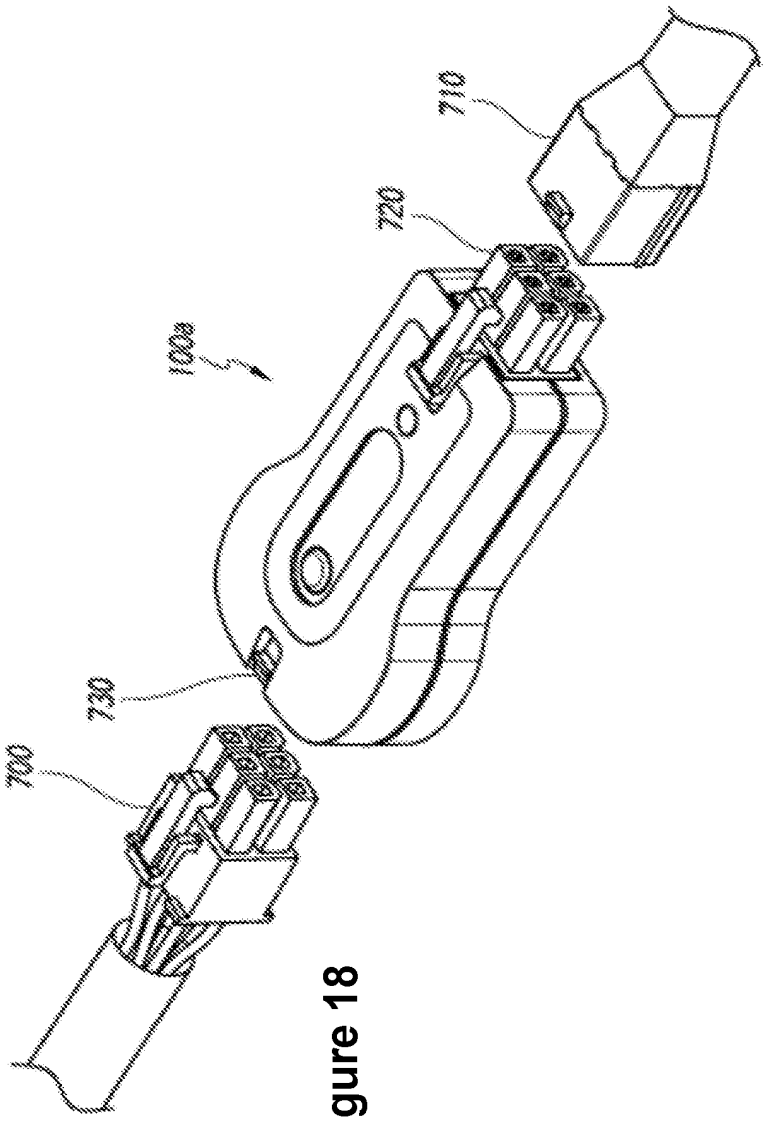


Figure 18

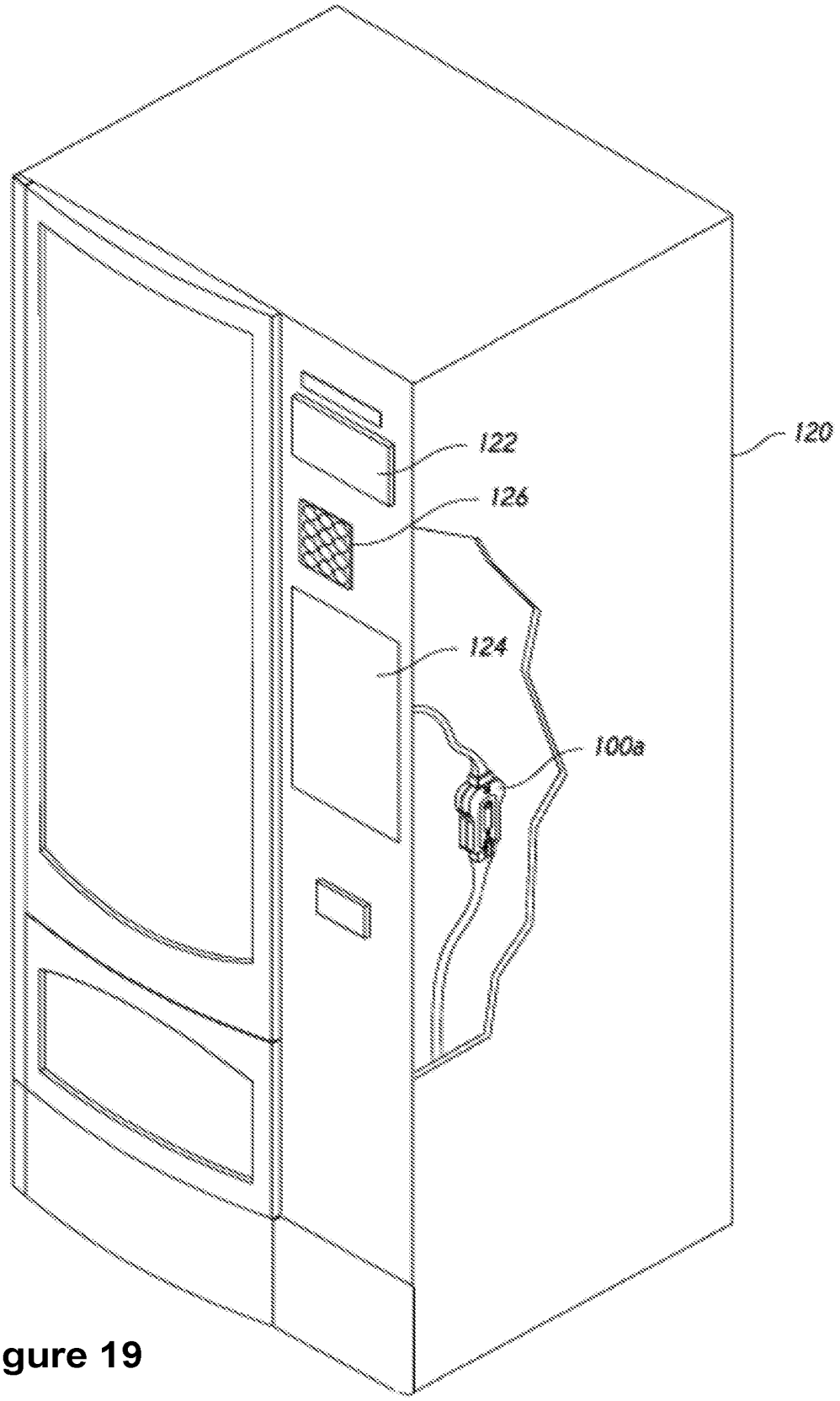


Figure 19

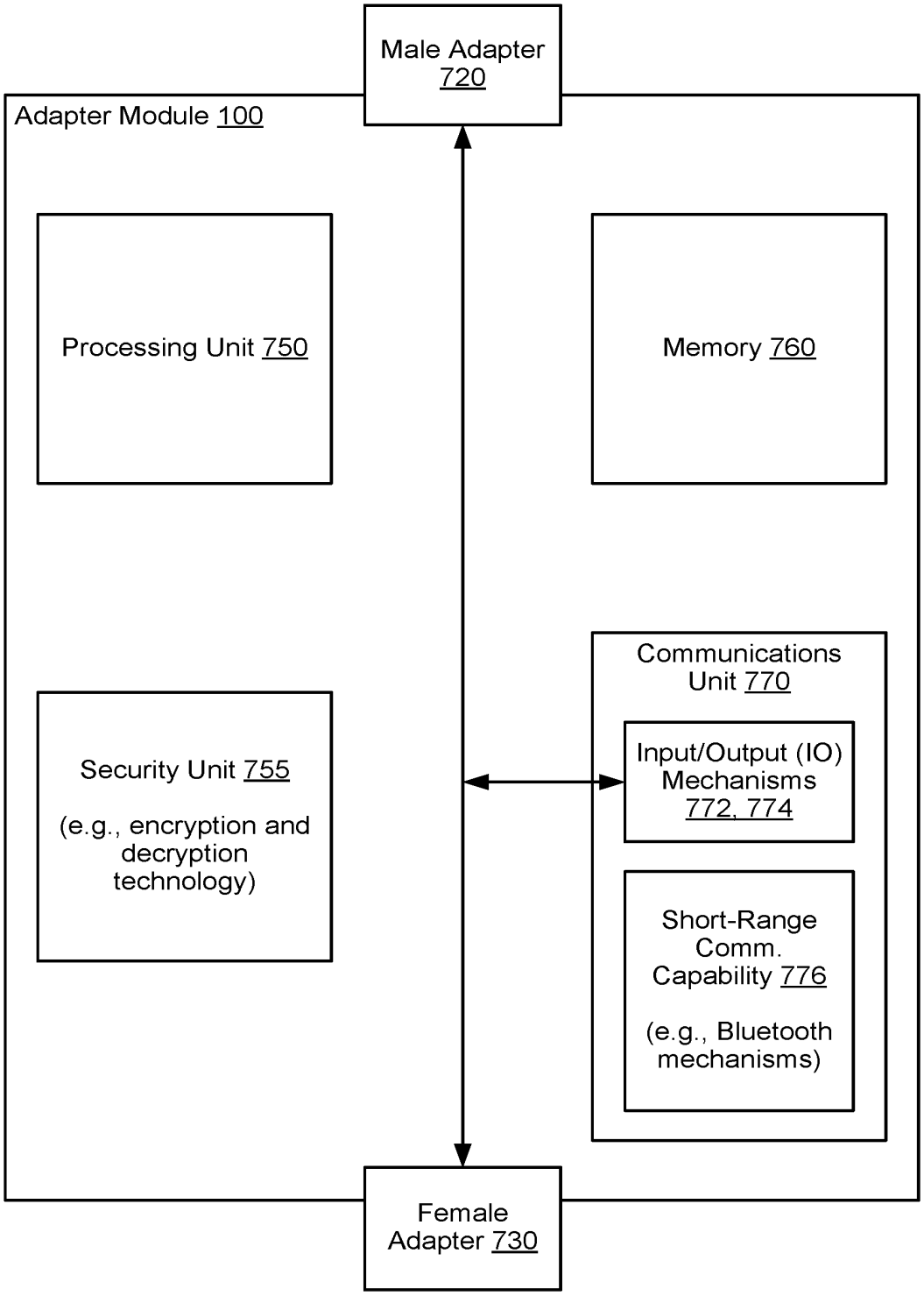

Male Adapter
720
Adapter Module 100
Processing Unit 750
Memory 760
Communications
Unit 770
Input/Output (IO)
Mechanisms
772, 774
Security Unit 755
(e.g., encryption and
decryption
technology)
Short-Range
Comm.
Capability 776
(e.g., Bluetooth
mechanisms)
Female
Adapter 730

Figure 20

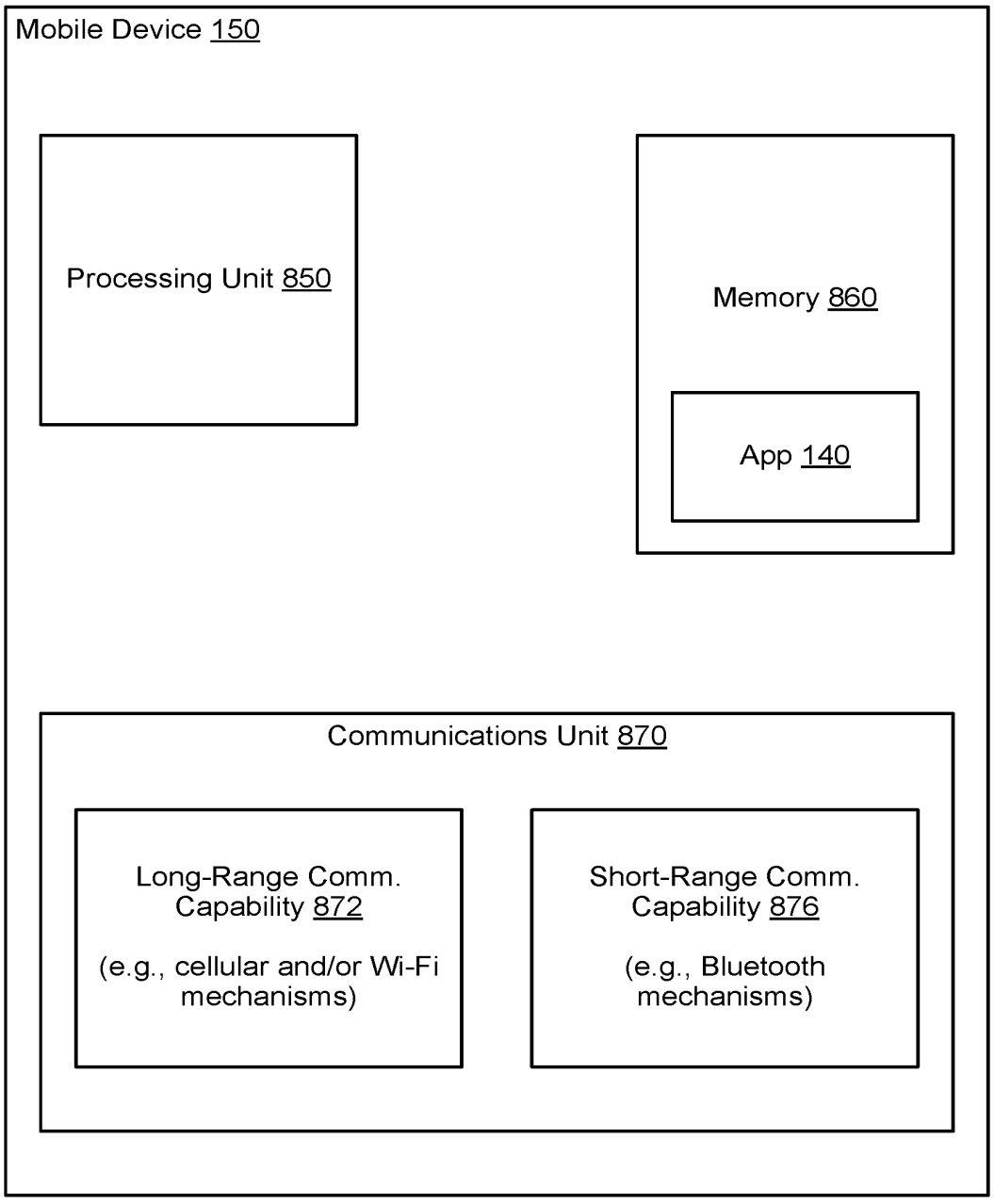

Mobile Device 150
Processing Unit 850
Memory 860
App 140
Communications Unit 870
Long-Range Comm. Capability 872
(e.g., cellular and/or Wi-Fi mechanisms)
Short-Range Comm. Capability 876
(e.g., Bluetooth mechanisms)

Figure 21

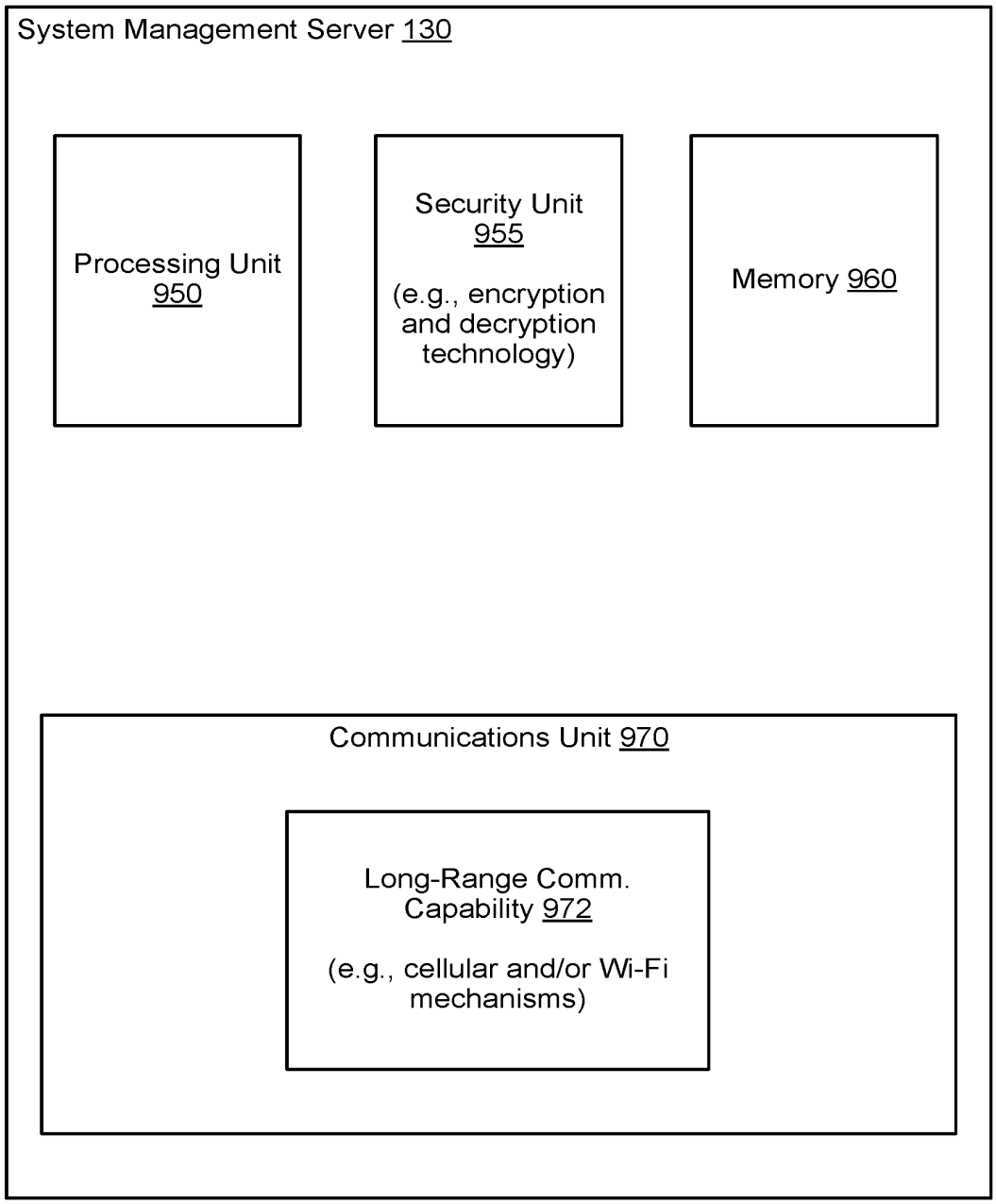

System Management Server 130
Processing Unit 950
Security Unit 955
(e.g., encryption and decryption technology)
Memory 960
Communications Unit 970
Long-Range Comm. Capability 972
(e.g., cellular and/or Wi-Fi mechanisms)

Figure 22

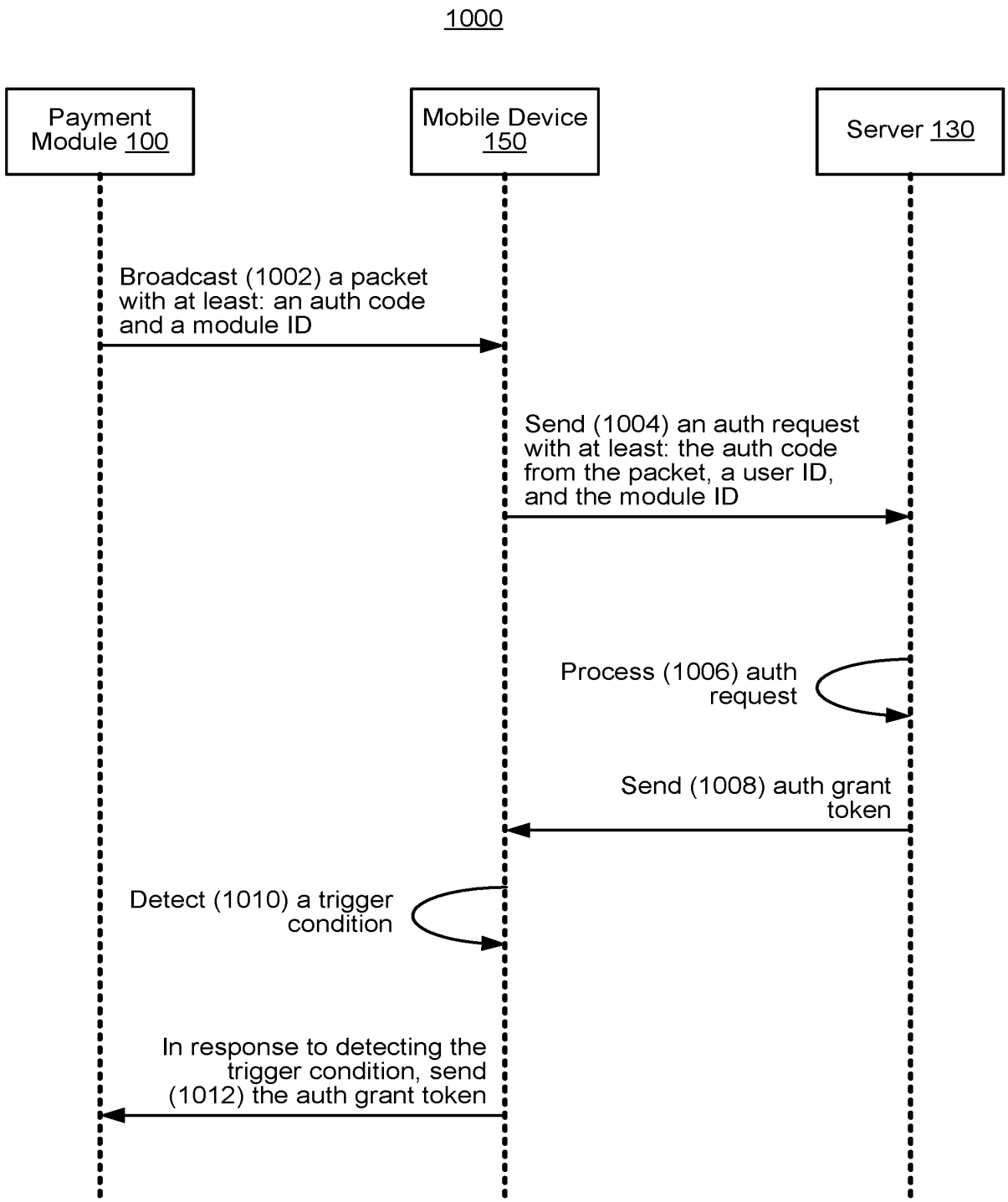

1000
Payment Module 100
Mobile Device 150
Server 130
Broadcast (1002) a packet with at least: an auth code and a module ID
Send (1004) an auth request with at least: the auth code from the packet, a user ID, and the module ID
Process (1006) auth request
Send (1008) auth grant token
Detect (1010) a trigger condition
In response to detecting the trigger condition, send (1012) the auth grant token

Figure 23

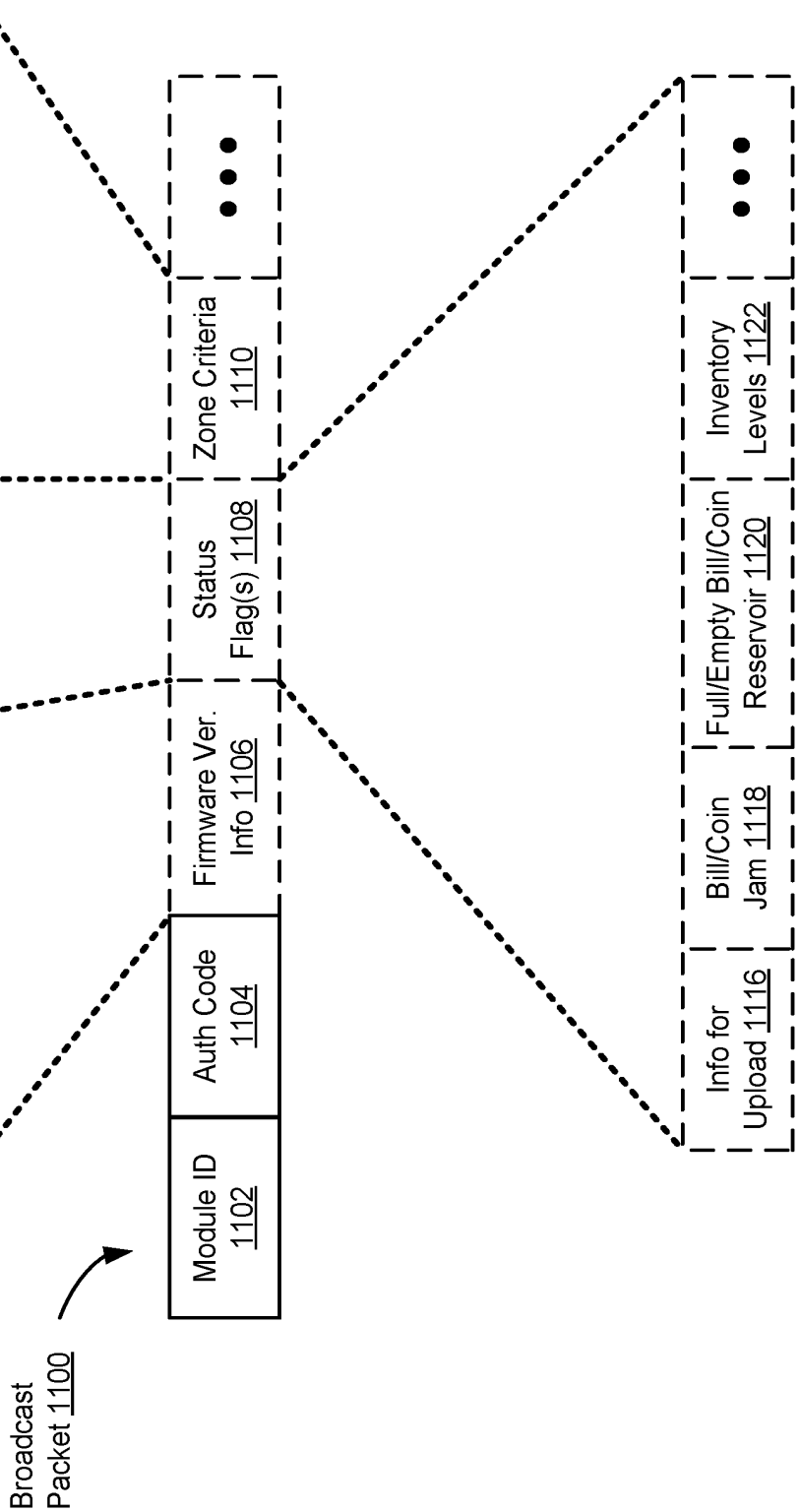

Broadcast Packet 1100
Module ID 1102
Auth Code 1104
Firmware Ver. Info 1106
Status Flag(s) 1108
Zone Criteria 1110
Current FW Ver. 1112
Update Status Info 1114
Info for Upload 1116
Bill/Coin Jam 1118
Full/Empty Bill/Coin Reservoir 1120
Inventory Levels 1122
Auth Zone Criterion 1124
Payment Zone Criterion 1126

Figure 24A

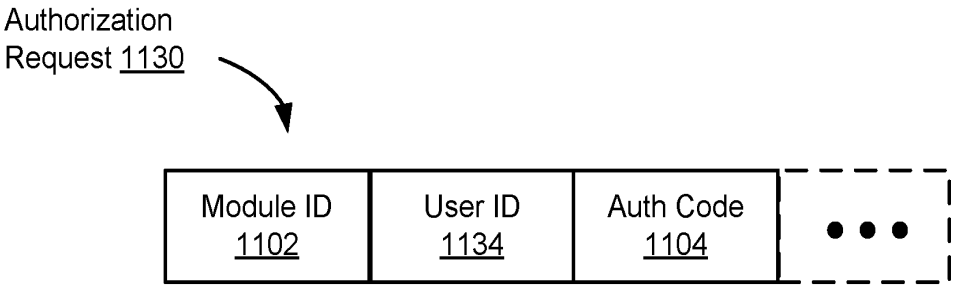


Figure 24B

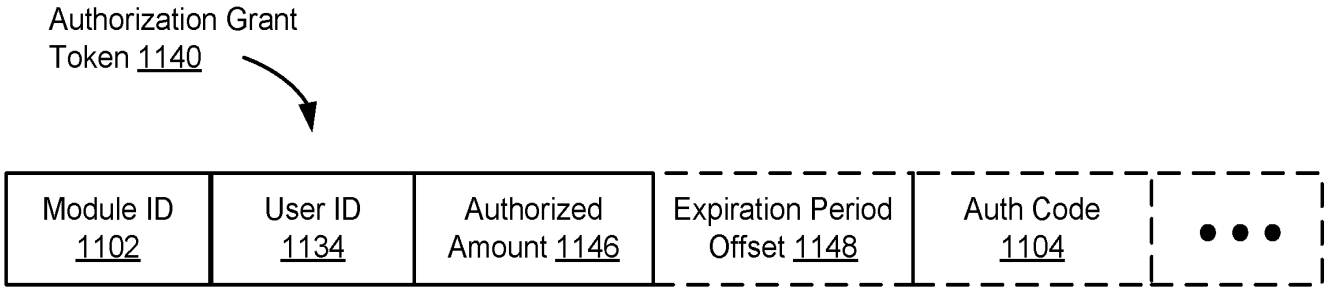


Figure 24C

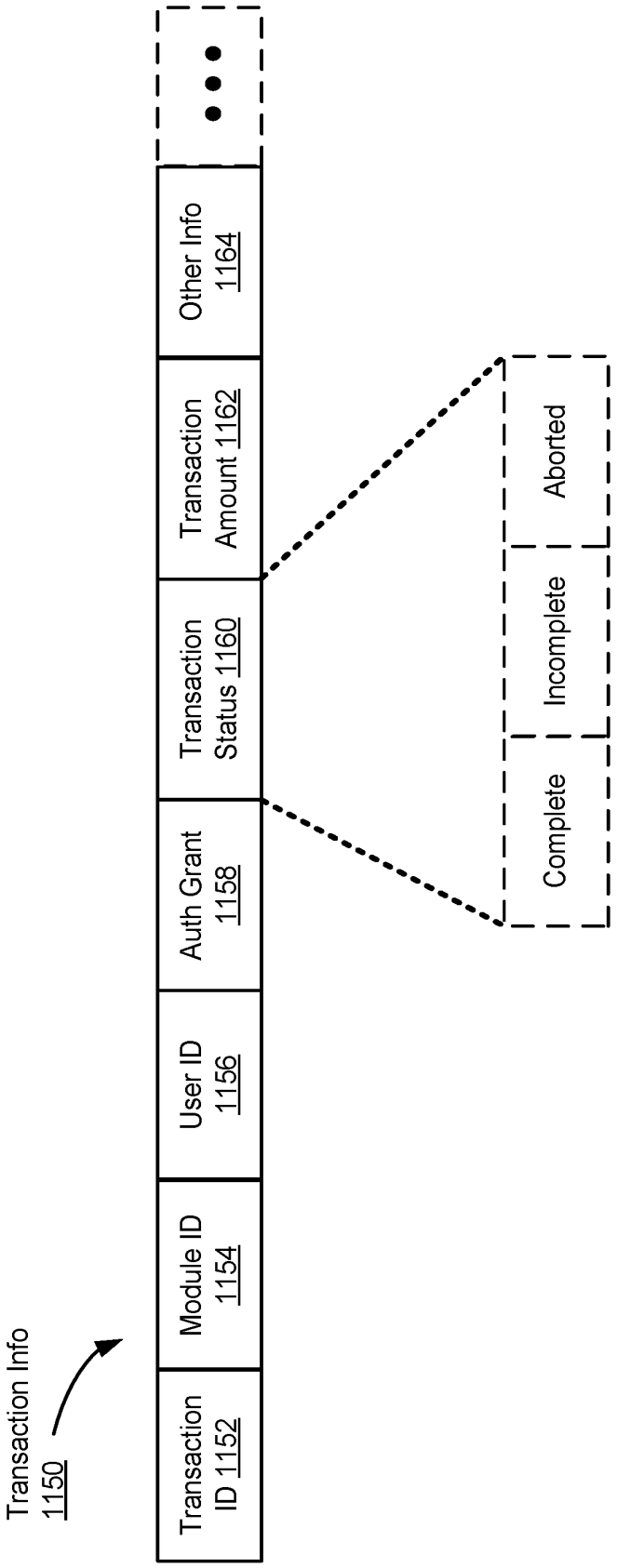

Transaction Info 1150
Transaction ID 1152
Module ID 1154
User ID 1156
Auth Grant 1158
Transaction Status 1160
Transaction Amount 1162
Other Info 1164
Complete
Incomplete
Aborted

Figure 24D

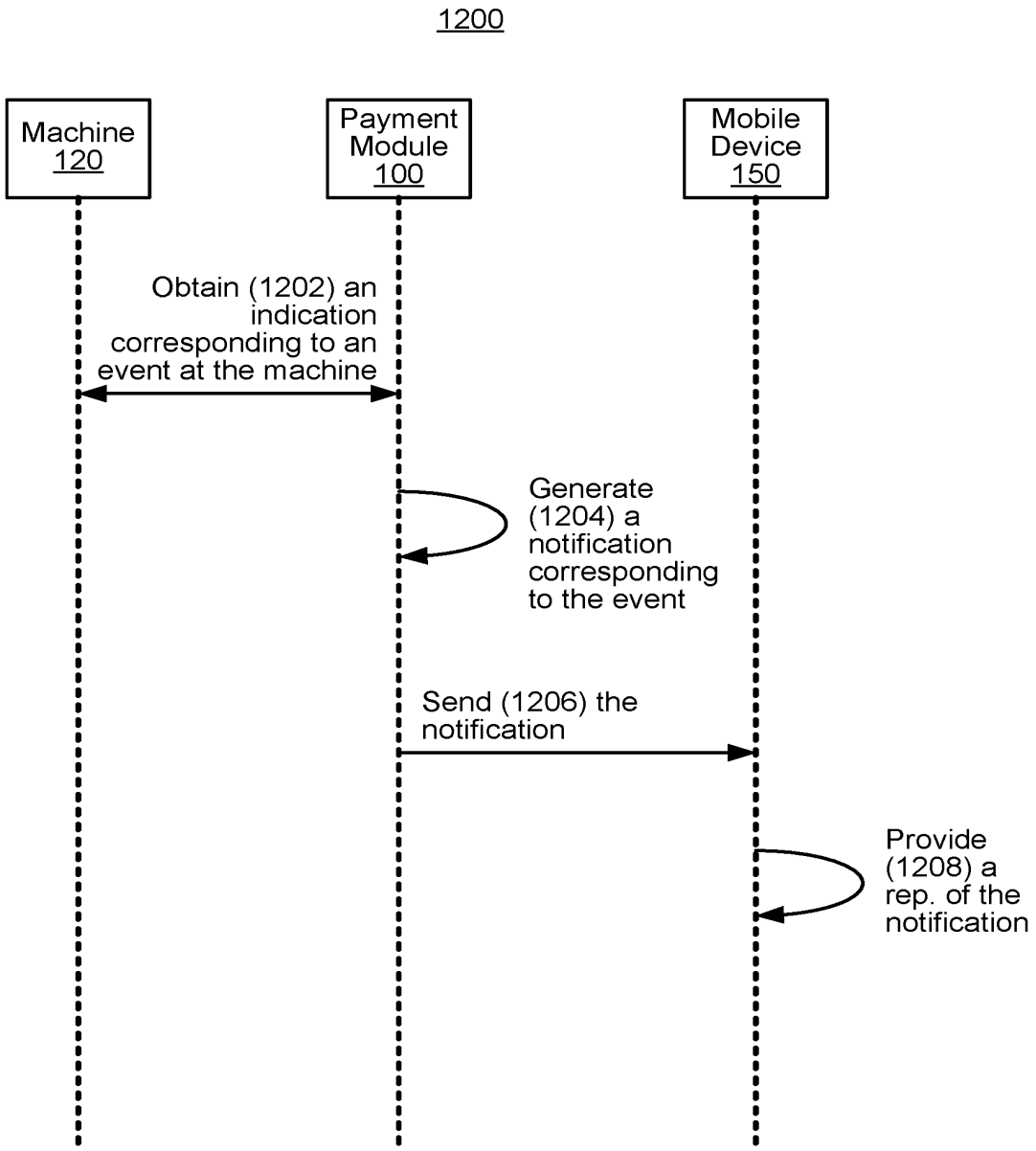

1200
Machine 120
Payment Module 100
Mobile Device 150
Obtain (1202) an indication corresponding to an event at the machine
Generate (1204) a notification corresponding to the event
Send (1206) the notification
Provide (1208) a rep. of the notification

Figure 25A

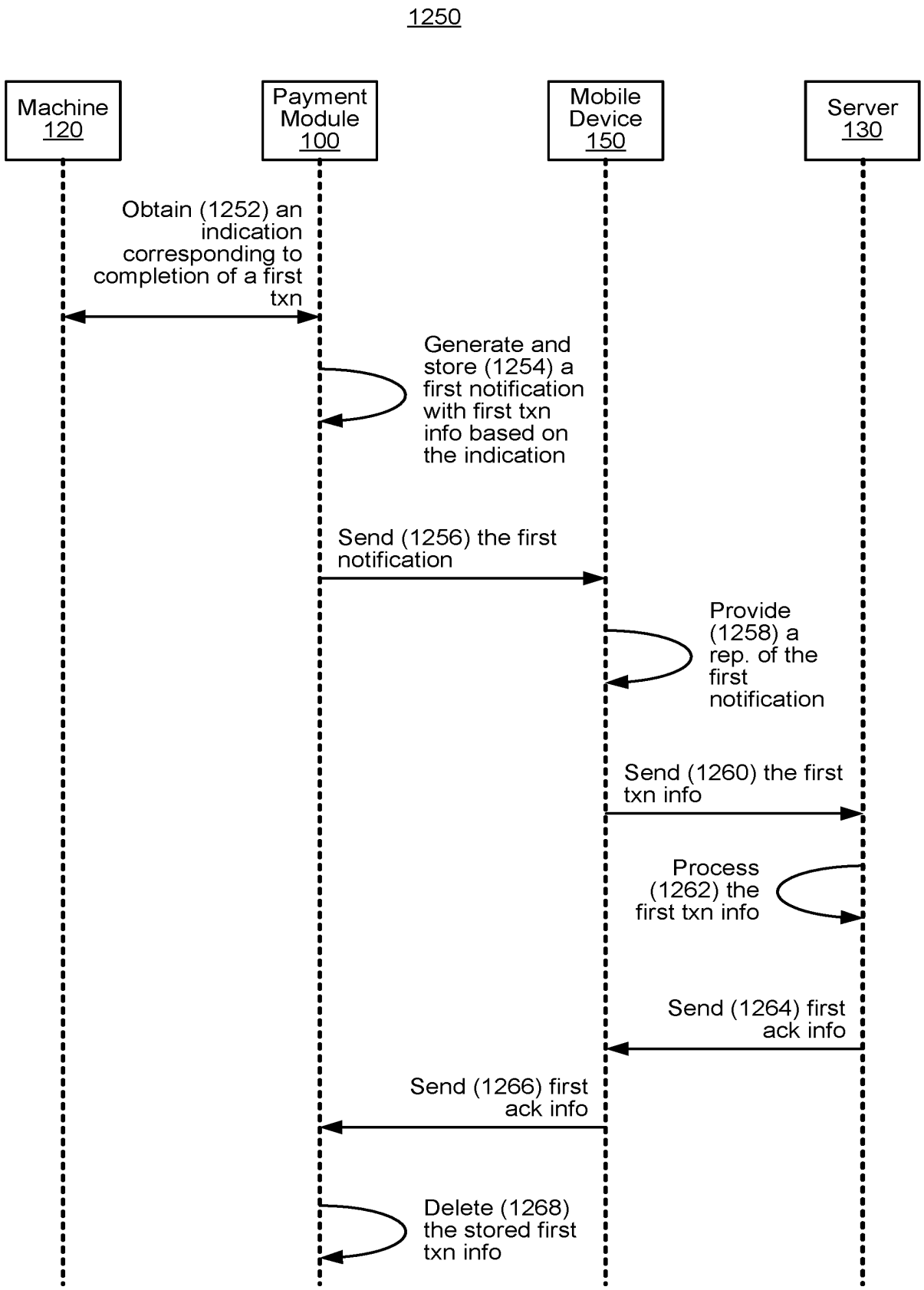

1250
Machine 120
Payment Module 100
Mobile Device 150
Server 130
Obtain (1252) an indication corresponding to completion of a first txn
Generate and store (1254) a first notification with first txn info based on the indication
Send (1256) the first notification
Provide (1258) a rep. of the first notification
Send (1260) the first txn info
Process (1262) the first txn info
Send (1264) first ack info
Send (1266) first ack info
Delete (1268) the stored first txn info

Figure 25B

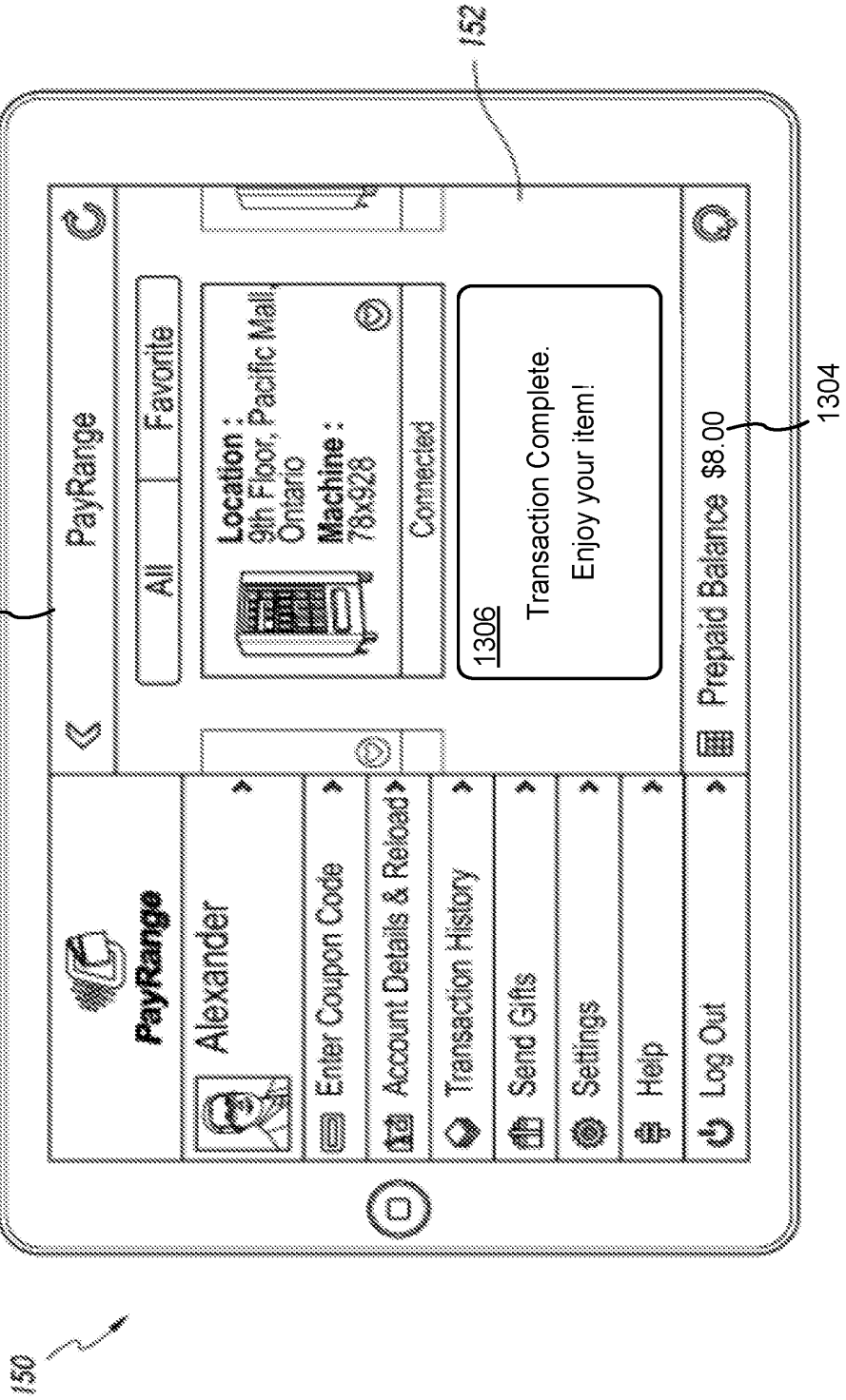

150
152
1302
1304
PayRange
All
Favorite
Location :
9th Floor, Pacific Mall,
Ontario
Machine :
78x928
Connected
1306
Transaction Complete.
Enjoy your item!
Prepaid Balance $8.00
PayRange
Alexander
Enter Coupon Code
Account Details & Reload
Transaction History
Send Gifts
Settings
Help
Log Out

Figure 26A

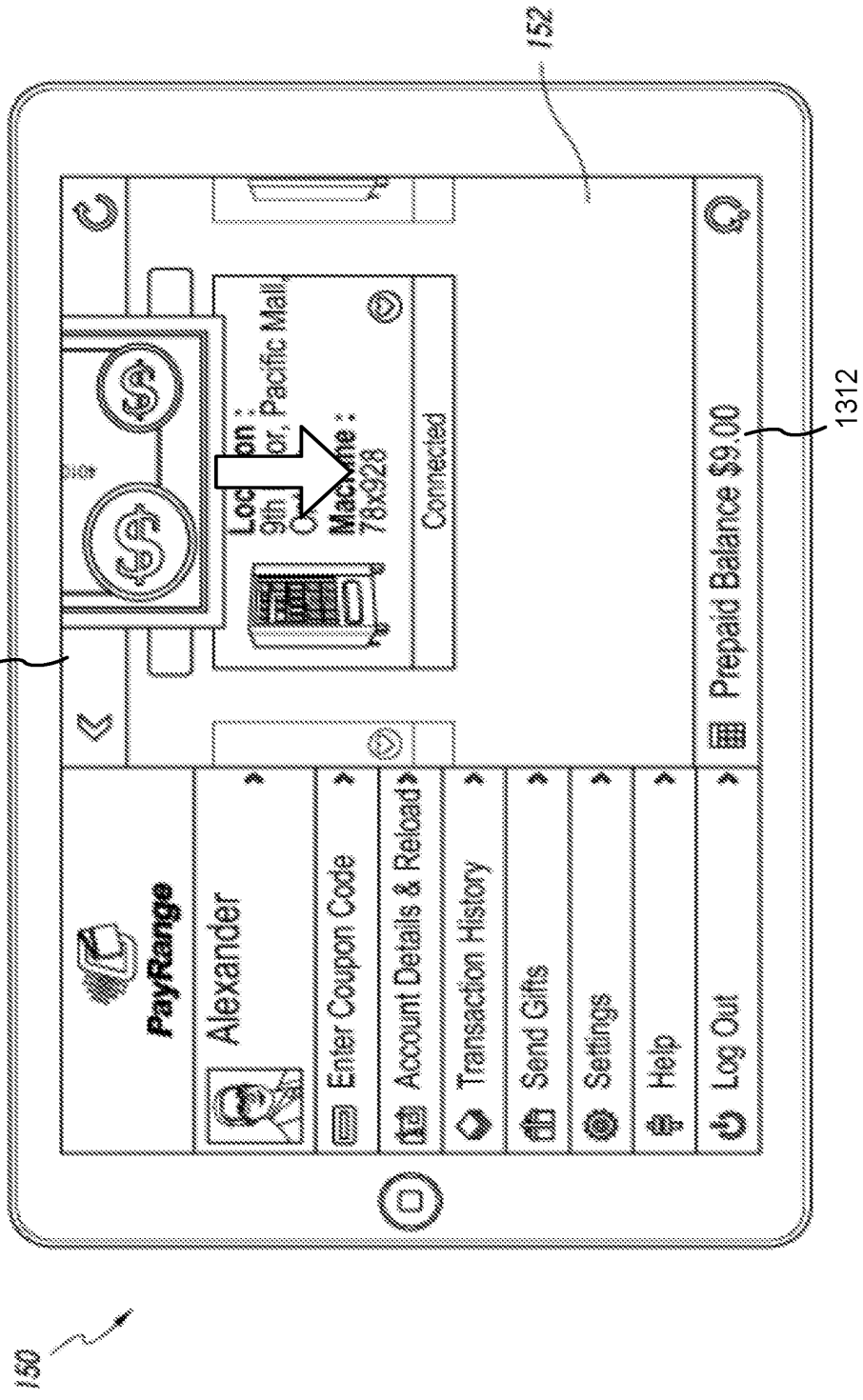

150
152
1310
1312
PayRange
Alexander
Enter Coupon Code
Account Details & Reload
Transaction History
Send Gifts
Settings
Help
Log Out
Connected
Prepaid Balance $9.00

Figure 26B

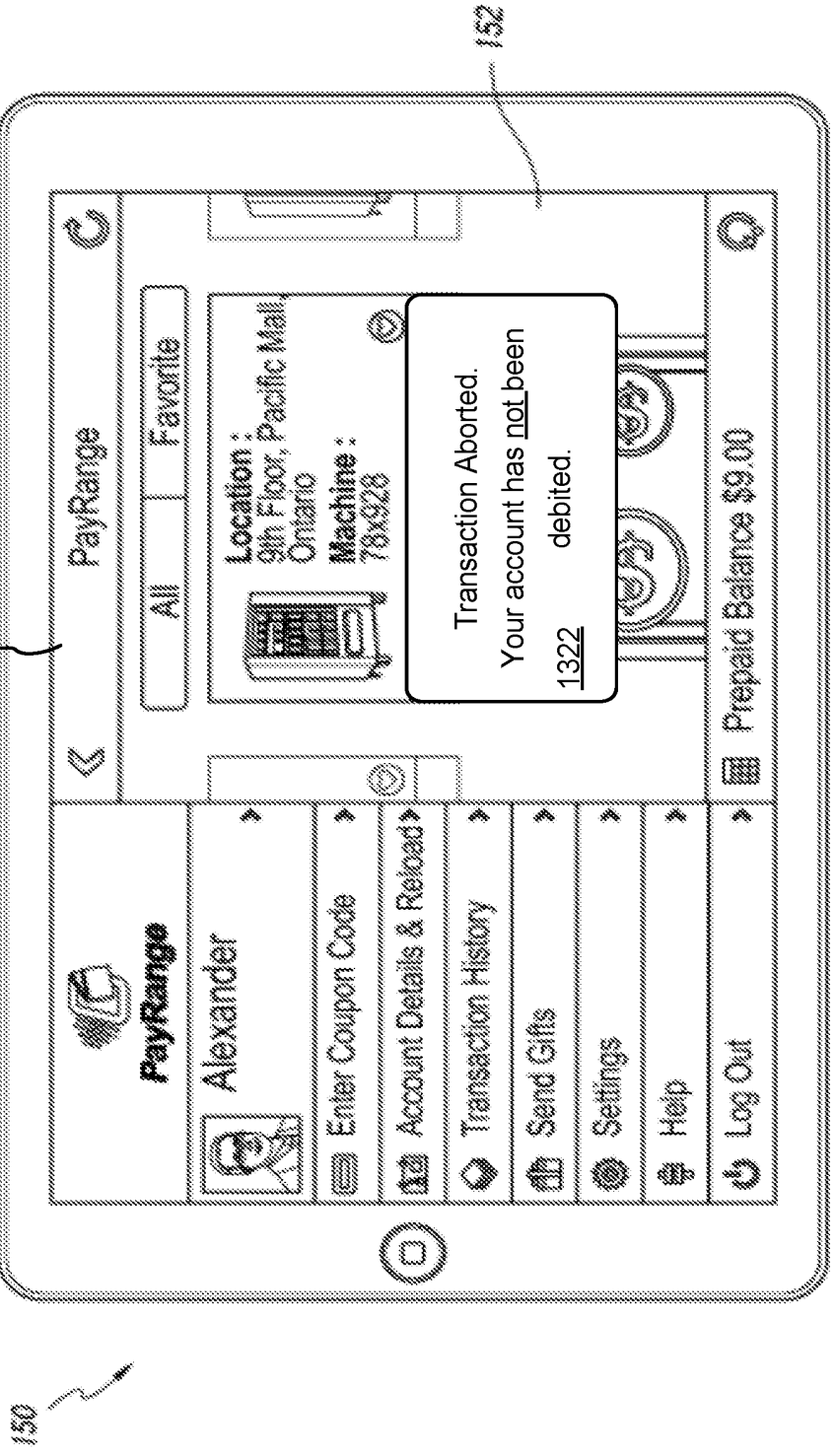

150
152
1320
PayRange
All
Favorite
Location :
9th Floor, Pacific Mall,
Ontario
Machine :
78x928
Transaction Aborted.
Your account has not been
debited.
1322
PayRange
Alexander
Enter Coupon Code
Account Details & Reload
Transaction History
Send Gifts
Settings
Help
Log Out
Prepaid Balance $9.00

Figure 26C

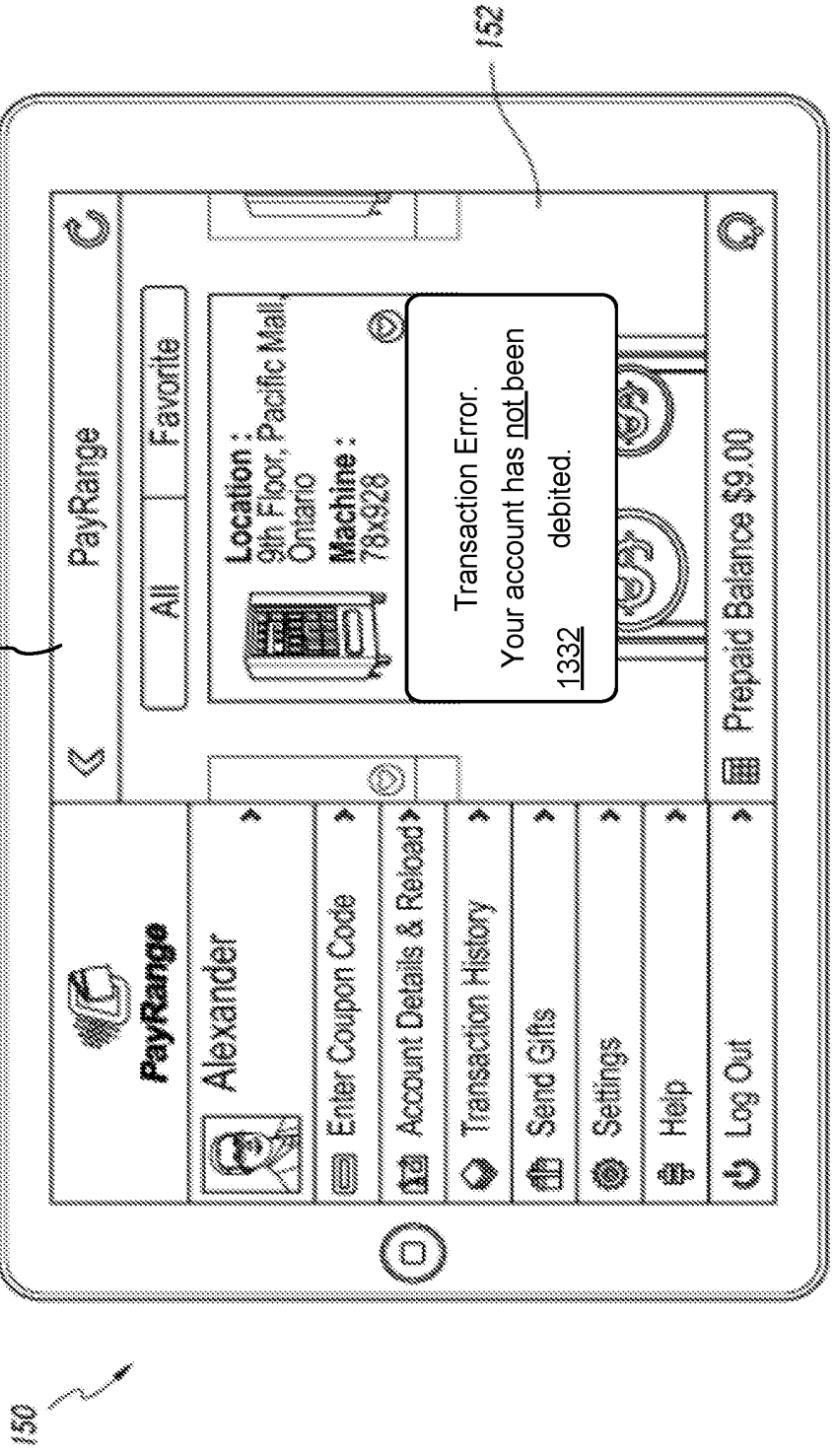

150
152
1330
PayRange
All
Favorite
Location :
9th Floor, Pacific Mall,
Ontario
Machine :
78x928
Transaction Error.
Your account has not been
debited.
1332
PayRange
Alexander
Enter Coupon Code
Account Details & Reload
Transaction History
Send Gifts
Settings
Help
Log Out
Prepaid Balance $9.00

Figure 26D

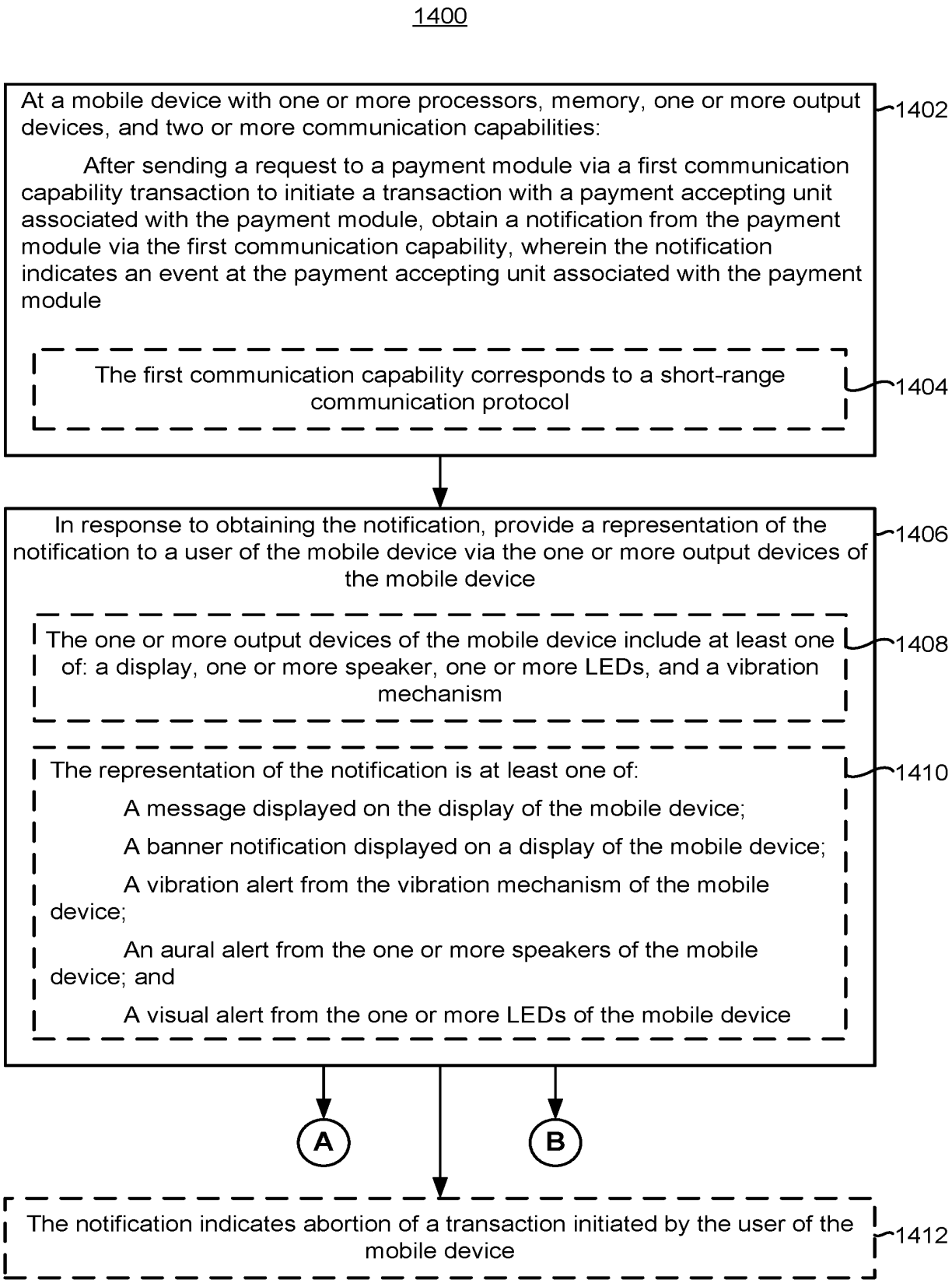

1400
At a mobile device with one or more processors, memory, one or more output devices, and two or more communication capabilities:
After sending a request to a payment module via a first communication capability transaction to initiate a transaction with a payment accepting unit associated with the payment module, obtain a notification from the payment module via the first communication capability, wherein the notification indicates an event at the payment accepting unit associated with the payment module
1402
The first communication capability corresponds to a short-range communication protocol
1404
In response to obtaining the notification, provide a representation of the notification to a user of the mobile device via the one or more output devices of the mobile device
1406
The one or more output devices of the mobile device include at least one of: a display, one or more speaker, one or more LEDs, and a vibration mechanism
1408
The representation of the notification is at least one of:
A message displayed on the display of the mobile device;
A banner notification displayed on a display of the mobile device;
A vibration alert from the vibration mechanism of the mobile device;
An aural alert from the one or more speakers of the mobile device; and
A visual alert from the one or more LEDs of the mobile device
1410
A
B
The notification indicates abortion of a transaction initiated by the user of the mobile device
1412

Figure 27A

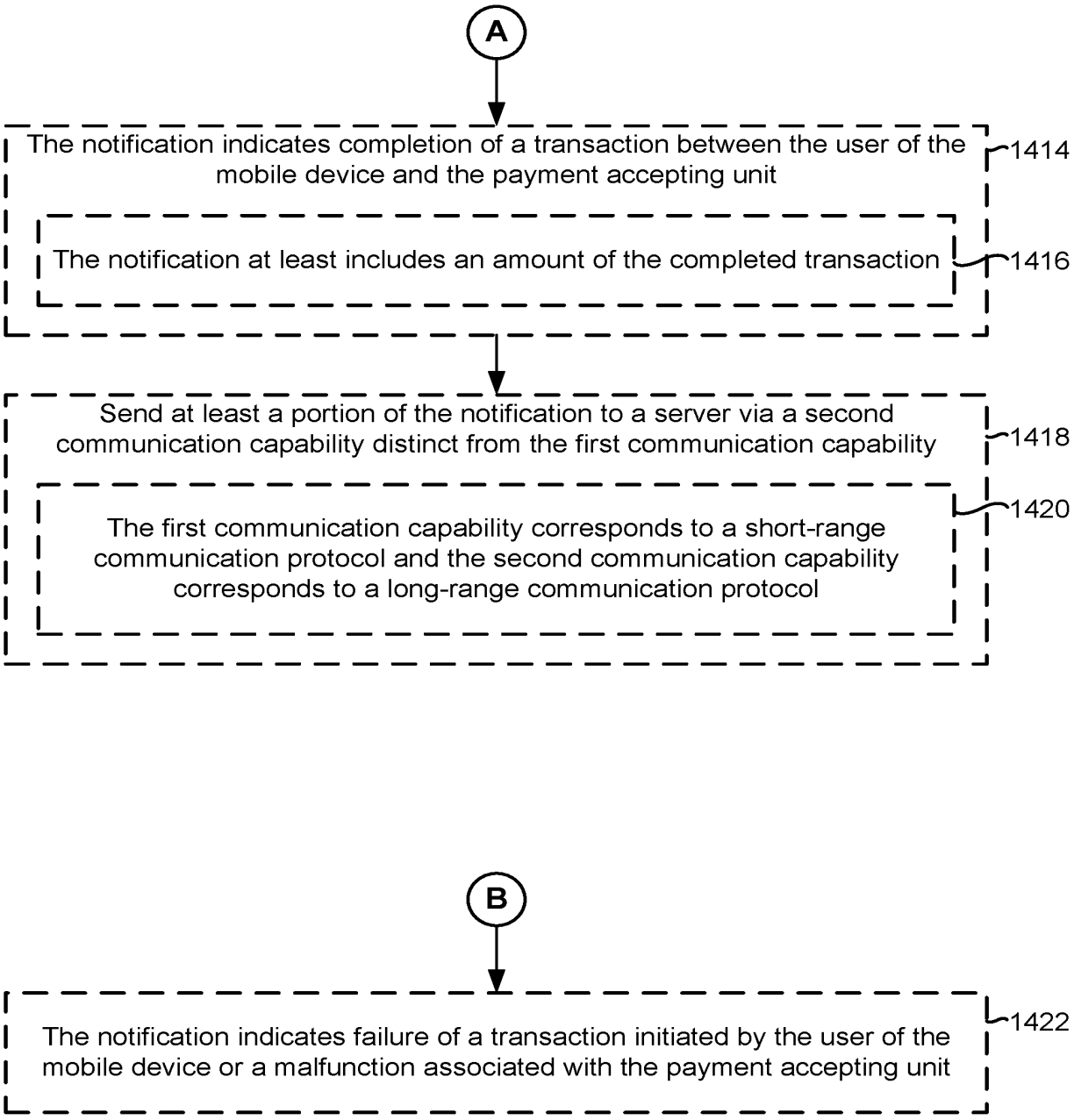

A
The notification indicates completion of a transaction between the user of the mobile device and the payment accepting unit
1414
The notification at least includes an amount of the completed transaction
1416
Send at least a portion of the notification to a server via a second communication capability distinct from the first communication capability
1418
1420
The first communication capability corresponds to a short-range communication protocol and the second communication capability corresponds to a long-range communication protocol
B
The notification indicates failure of a transaction initiated by the user of the mobile device or a malfunction associated with the payment accepting unit
1422

Figure 27B

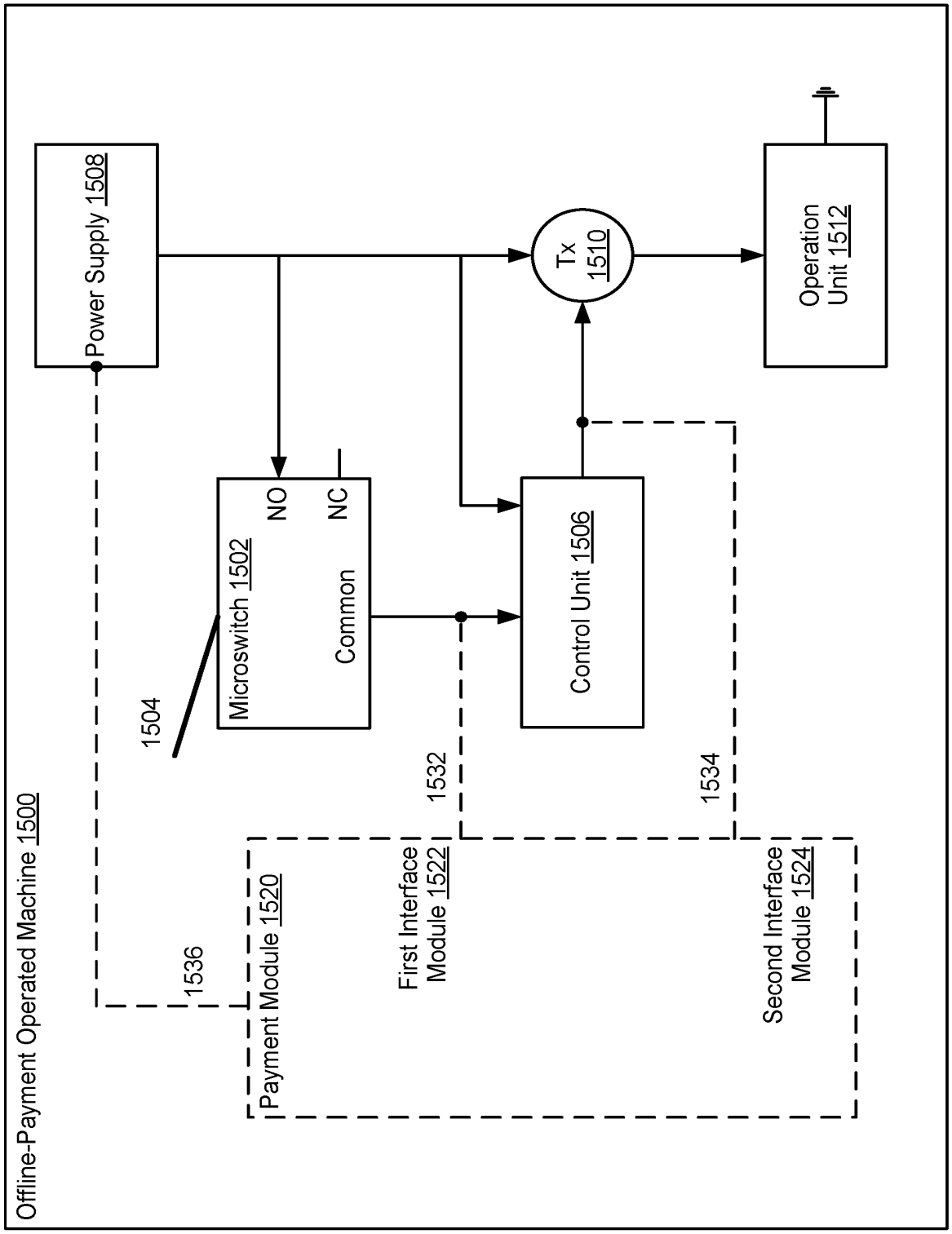

Offline-Payment Operated Machine 1500
Power Supply 1508
Tx 1510
Operation Unit 1512
Microswitch 1502
NO
NC
Common
1504
Control Unit 1506
1532
1534
Payment Module 1520
First Interface Module 1522
Second Interface Module 1524
1536

Figure 28A

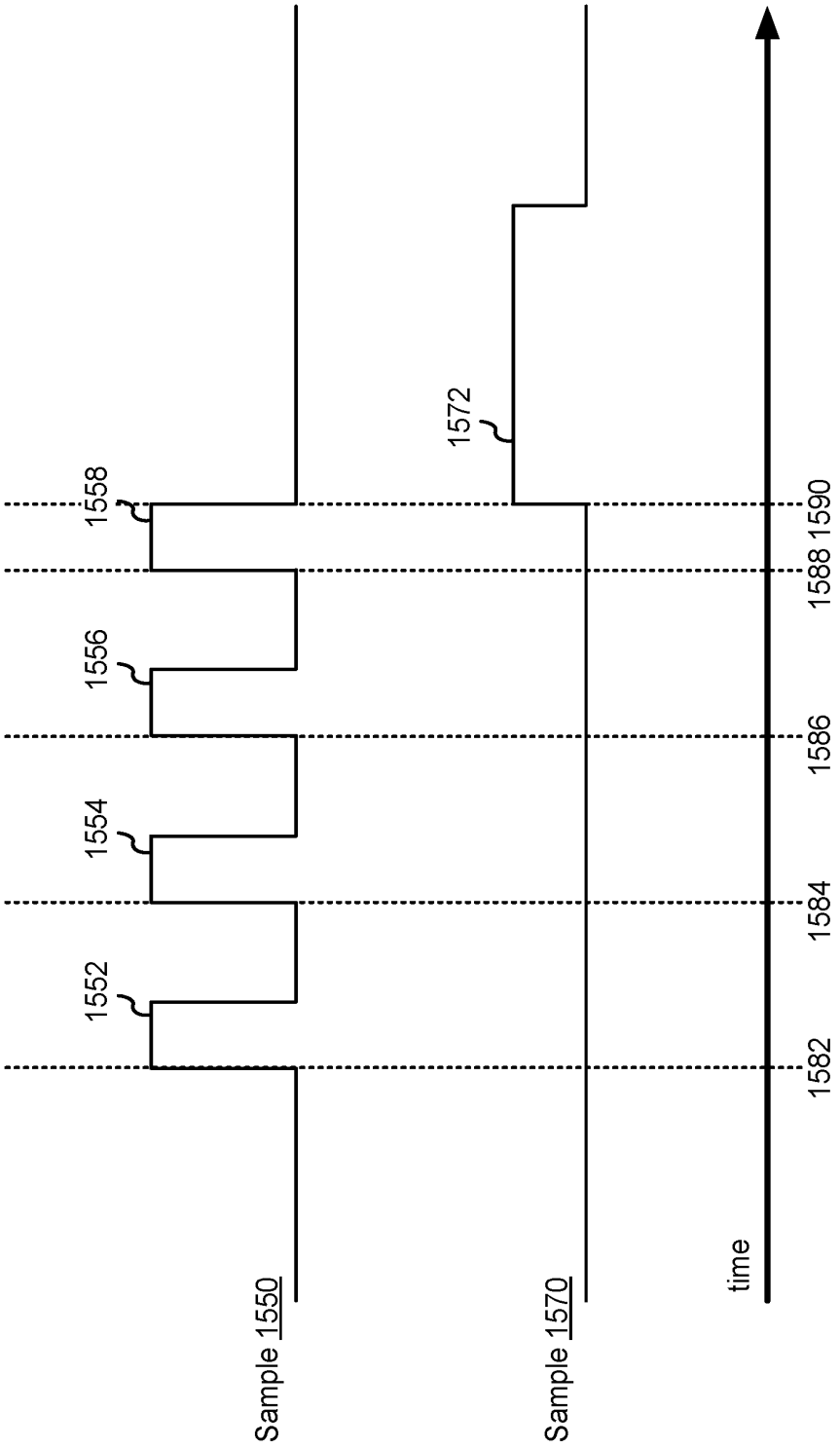

1558
1556
1554
1552
1572
1582
1584
1586
1588
1590
Sample 1550
Sample 1570
time

Figure 28B

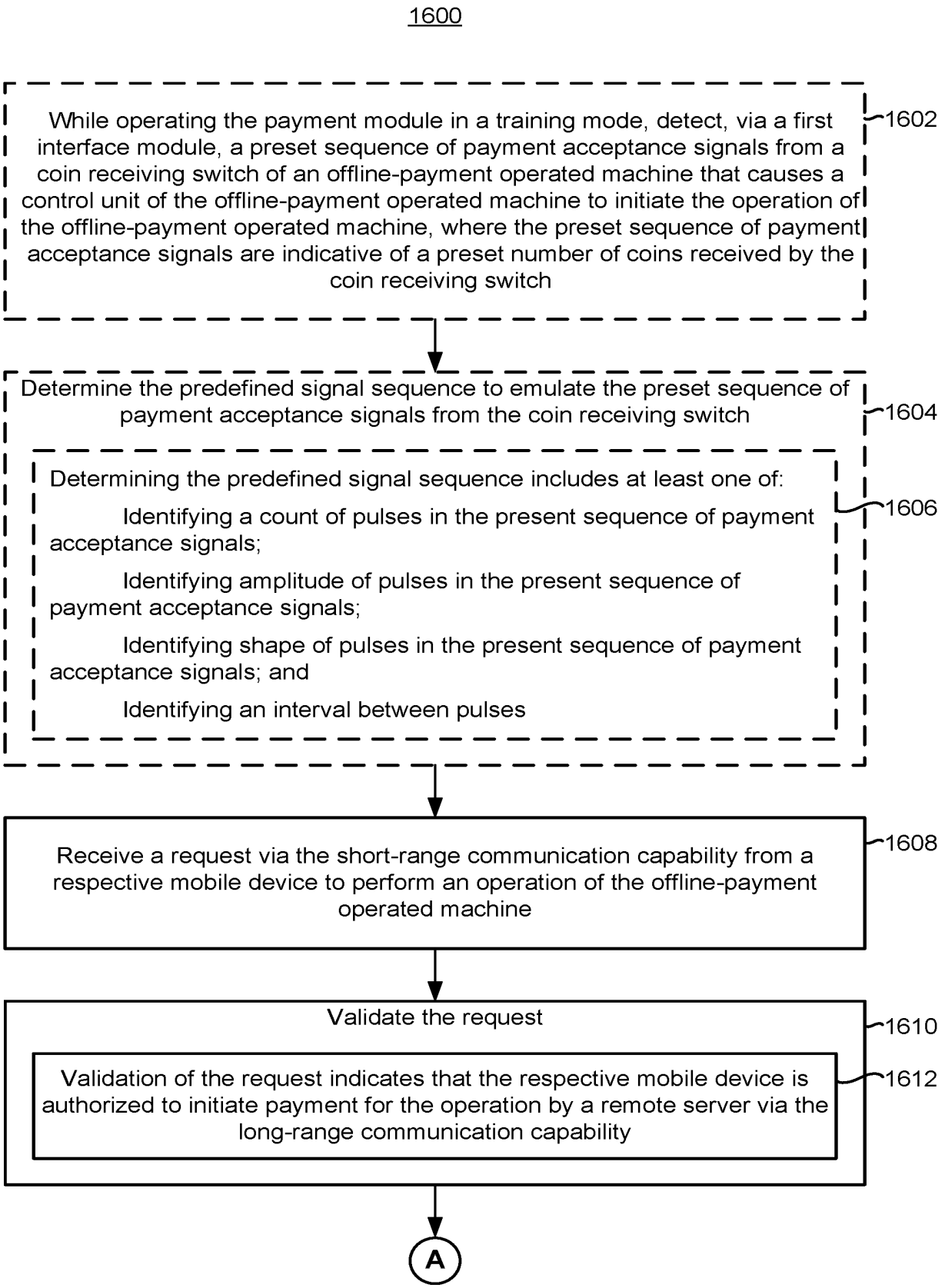

1600
While operating the payment module in a training mode, detect, via a first interface module, a preset sequence of payment acceptance signals from a coin receiving switch of an offline-payment operated machine that causes a control unit of the offline-payment operated machine to initiate the operation of the offline-payment operated machine, where the preset sequence of payment acceptance signals are indicative of a preset number of coins received by the coin receiving switch
1602
Determine the predefined signal sequence to emulate the preset sequence of payment acceptance signals from the coin receiving switch
1604
Determining the predefined signal sequence includes at least one of:
Identifying a count of pulses in the present sequence of payment acceptance signals;
Identifying amplitude of pulses in the present sequence of payment acceptance signals;
Identifying shape of pulses in the present sequence of payment acceptance signals; and
Identifying an interval between pulses
1606
Receive a request via the short-range communication capability from a respective mobile device to perform an operation of the offline-payment operated machine
1608
Validate the request
1610
Validation of the request indicates that the respective mobile device is authorized to initiate payment for the operation by a remote server via the long-range communication capability
1612
A

Figure 29A

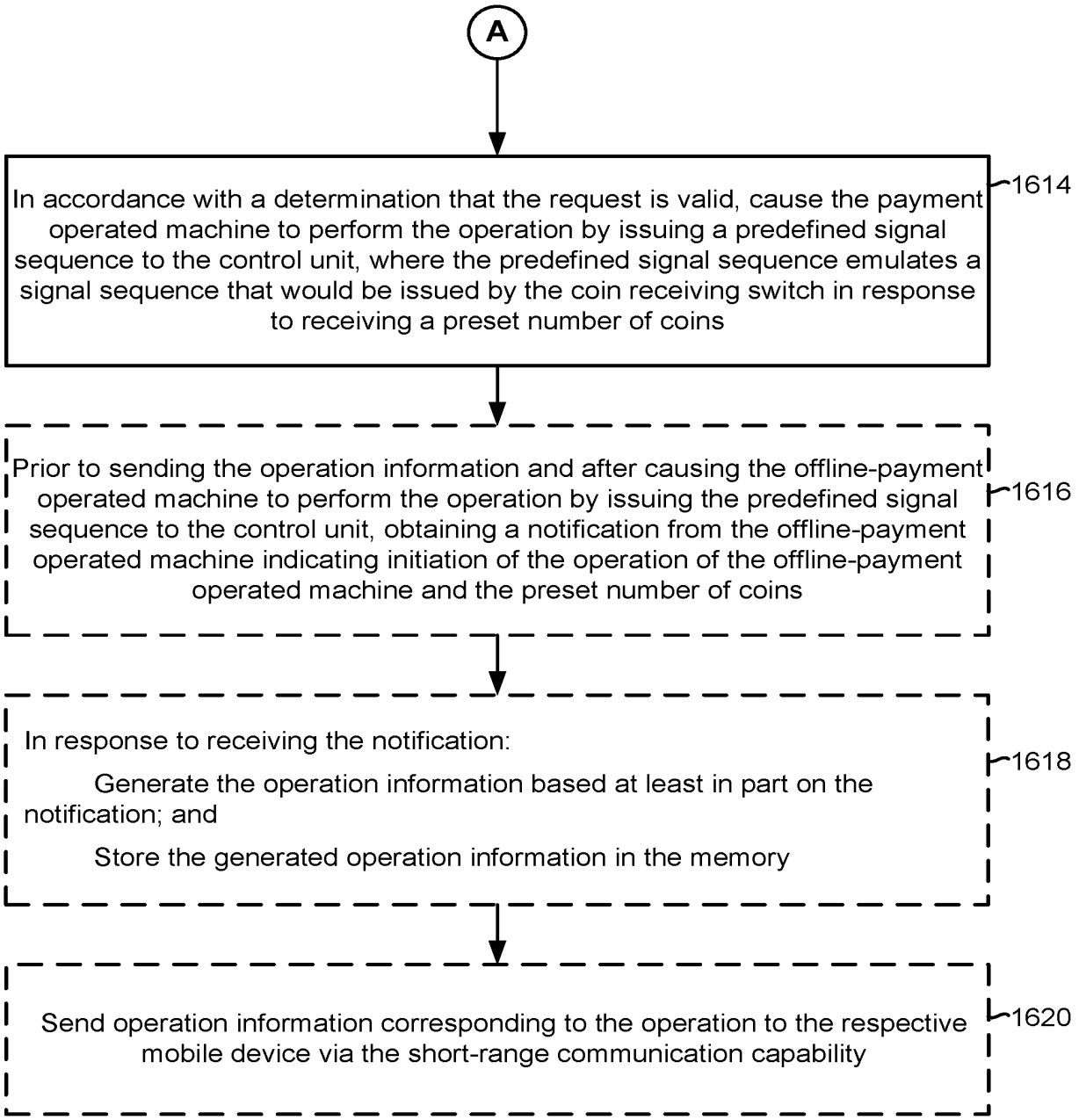

A
In accordance with a determination that the request is valid, cause the payment operated machine to perform the operation by issuing a predefined signal sequence to the control unit, where the predefined signal sequence emulates a signal sequence that would be issued by the coin receiving switch in response to receiving a preset number of coins
1614
Prior to sending the operation information and after causing the offline-payment operated machine to perform the operation by issuing the predefined signal sequence to the control unit, obtaining a notification from the offline-payment operated machine indicating initiation of the operation of the offline-payment operated machine and the preset number of coins
1616
In response to receiving the notification:
Generate the operation information based at least in part on the notification; and
Store the generated operation information in the memory
1618
Send operation information corresponding to the operation to the respective mobile device via the short-range communication capability
1620

Figure 29B

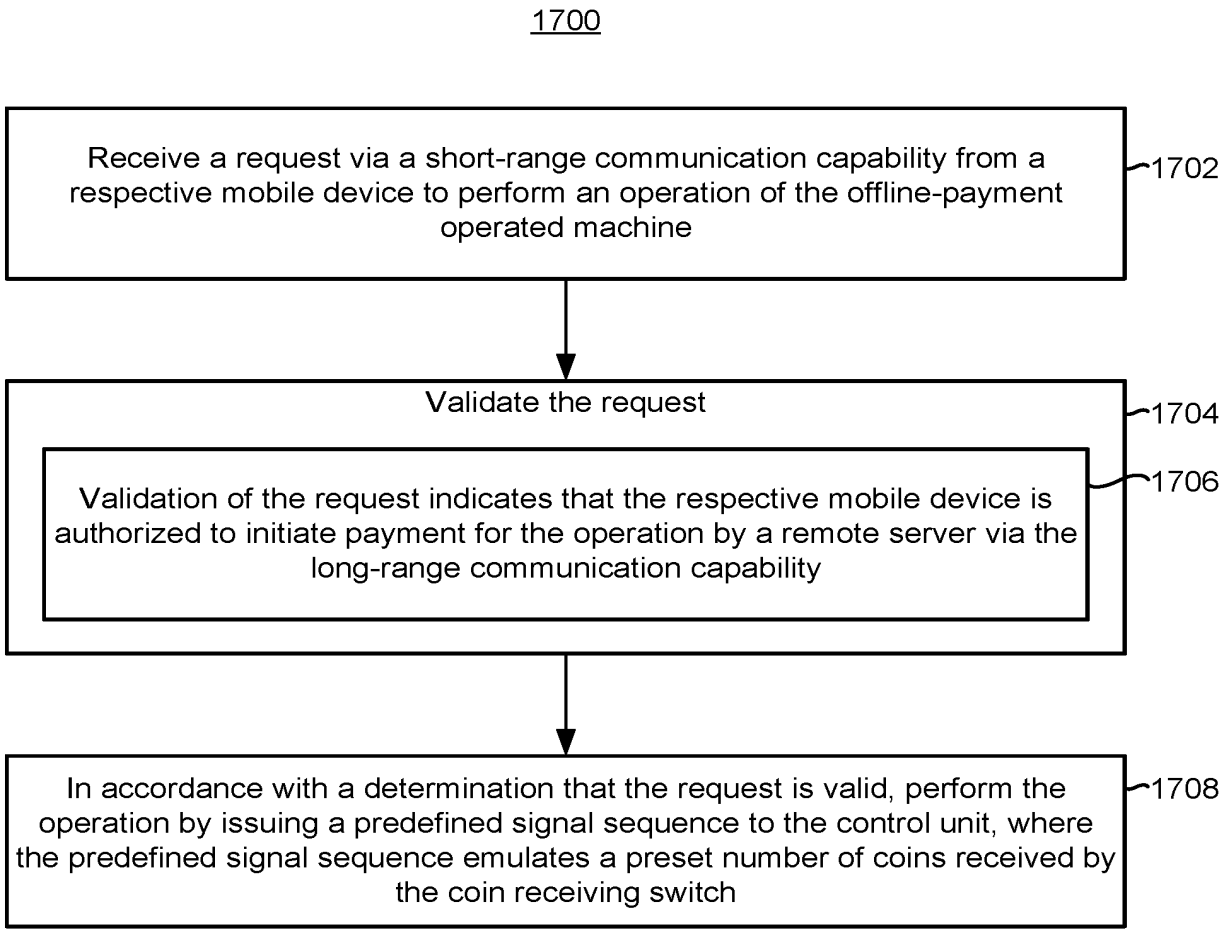

1700
Receive a request via a short-range communication capability from a respective mobile device to perform an operation of the offline-payment operated machine
1702
Validate the request
1704
Validation of the request indicates that the respective mobile device is authorized to initiate payment for the operation by a remote server via the long-range communication capability
1706
In accordance with a determination that the request is valid, perform the operation by issuing a predefined signal sequence to the control unit, where the predefined signal sequence emulates a preset number of coins received by the coin receiving switch
1708

Figure 30

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS
First Named Inventor/Applicant Name:	Paresh K. Patel
Filer:	Douglas James Crisman/Linda Quintana
Attorney Docket Number:	104402-5035-US

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	75	75
UTILITY SEARCH FEE	2111	1	330	330
UTILITY EXAMINATION FEE	2311	1	380	380
Pages:				
Claims:				
INDEPENDENT CLAIMS IN EXCESS OF 3	2201	1	230	230
Miscellaneous-Filing:				
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**1015**

Electronic Acknowledgement Receipt

EFS ID:	31585933
Application Number:	15878352
International Application Number:	
Confirmation Number:	1006
Title of Invention:	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS
First Named Inventor/Applicant Name:	Paresh K. Patel
Customer Number:	24341
Filer:	Douglas James Crisman/Linda Quintana
Filer Authorized By:	Douglas James Crisman
Attorney Docket Number:	104402-5035-US
Receipt Date:	23-JAN-2018
Filing Date:	
Time Stamp:	20:32:14
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$1015
RAM confirmation Number	012418INTEFSW00005786500310
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal of New Application	104402-5035-US_Transmittal.pdf	203686 4ff14022d5902ba3253c28c50aca366fd3da3dfb	no	1
Warnings:					
Information:					
2	Application Data Sheet	104402-5035-US_ADS.pdf	1823459 589f7f4bcc089f983cbe9aac170738714 1f37b91	no	9
Warnings:					
Information:					
3	Oath or Declaration filed	104402-5035-US_FullyExecutedDeclaration.pdf	67782 91470e78bf9a7ea648c1f2c843d6fdb4e61acb88	no	1
Warnings:					
Information:					
4	Assignee showing of ownership per 37 CFR 3.73	104402-5035-US_373c.pdf	126983 dc362e8e319f9411e35aaf93bff6f54703521079	no	1
Warnings:					
Information:					
5	Power of Attorney	PAYRANGE_POA_373c.pdf	310730 d9de0be73b56fcc8a70f8334c59246cc35e01227	no	1
Warnings:					
Information:					
6		104402-5035-US_Specification.pdf	396864 95b9bfdbf34c6cd0541f79682e47dc0377e5b2a9	yes	71
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	

	Specification		1	64	
	Claims		65	70	
	Abstract		71	71	
Warnings:					
Information:					
7	Drawings-only black and white line drawings	104402-5035-US_Figures.pdf	6447225 eb780141f17f945f8f1cd2cfe004426c753e0408	no	45
Warnings:					
Information:					
8	Fee Worksheet (SB06)	fee-info.pdf	36616 6a662b986df522bc8360f4210c30e1a439b36a14	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	9413345		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
15/878,352	01/23/2018	2876	1015	104402-5035-US	20	4

CONFIRMATION NO. 1006

24341
Morgan, Lewis & Bockius LLP (PA)
1400 Page Mill Road
Palo Alto, CA 94304-1124

FILING RECEIPT

OC000000097478049

Date Mailed: 02/20/2018

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Paresh K. Patel, Portland, OR;

Applicant(s)

Payrange Inc., Portland, OR;

Power of Attorney: The patent practitioners associated with Customer Number 24341

Domestic Priority data as claimed by applicant

This application is a CON of 14/458,192 08/12/2014 PAT 9875473
which is a CIP of 14/456,683 08/11/2014 PAT 9256873
which is a CON of 14/335,762 07/18/2014 PAT 9547859
which is a CON of 14/214,644 03/14/2014 PAT 8856045
which claims benefit of 61/917,936 12/18/2013
and is a CIP of 29/477,025 12/18/2013 PAT D755183

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 02/15/2018
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/878,352**
Projected Publication Date: To Be Determined - pending completion of Corrected Papers
Non-Publication Request: No
Early Publication Request: No
** **SMALL ENTITY** **
Title

METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS

Preliminary Class

235

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 15/878,352

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	75		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	330		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	380		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*	x 50 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1	x 230 =	230			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	1015		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)		OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/878,352	01/23/2018	Paresh K. Patel	104402-5035-US

CONFIRMATION NO. 1006

24341
Morgan, Lewis & Bockius LLP (PA)
1400 Page Mill Road
Palo Alto, CA 94304-1124

FORMALITIES LETTER

OC000000097478050

Date Mailed: 02/20/2018

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Filing Date Granted

An application number and filing date have been accorded to this application. The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given TWO MONTHS from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
  - The drawings submitted to the Office are not electronically reproducible because portions of figures 8C-9E are missing and/or blurry.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

CSC ServiceWorks – Ex. 1002
Page 139 of 367

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

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Alexandria VA 22313-1450

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/tnguyen/

Electronically filed March 15, 2018

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:	Paresh K. Patel	Confirmation No.:	1006
Serial No.:	15/878,352	Art Unit:	2876
Filed:	January 23, 2018	Examiner:	Not yet assigned
For:	*Method And System For Retrofitting An Offline-Payment Operated Machine To Accept Electronic Payments*	Attorney Docket No:	104402-5035-US

PRELIMINARY AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Please amend the application as set forth on the following pages.

Amendments to the abstract begin on page 2.

Remarks begin on page 3.

CSC ServiceWorks – Ex. 1002
Page 141 of 367

Please amend the abstract as follows:

This application discloses a ~~A~~ payment module with one or more processors, memory, a short-range ~~communication capability (e.g., BLE)~~ wireless transceiver configured to communicate with one or more mobile devices, and a first interface module configured to output to a control unit of the offline payment-operated machine one or more electrical pulses~~, each of the one or more electrical pulses emulating an analog signal generated by the coin receiving switch of the offline payment-operated machine in response to insertion of a single coin of a predetermined type in the offline payment-operated machine~~., ~~and a second interface module configured to sample control signals from the control unit of the offline payment-operated machine that initiate operation of the offline payment-operated machine~~, The payment module receives a wireless request via the short-range wireless transceiver from a respective mobile device of the one or more mobile devices to initiate a cashless operation of the offline-payment operated machine. In response ~~to the wireless request~~, the payment module causes the offline payment-operated machine to initiate the requested cashless operation by issuing a first number of electrical pulses to the control unit via the first interface module. Further, in response to the wireless request, the payment module sends operation information corresponding to the initiated operation of the offline payment-operated machine to the respective mobile device via the short-range wireless transceiver.

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REMARKS

The abstract has been amended.

No fee is believed to be due at this time, however, the Commissioner is hereby authorized to charge any additional fees associated with this paper communication or credit any overpayment to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310 (order no. 104402-5035-US).

Respectfully submitted,

Date: March 15, 2018

/Douglas J. Crisman/ 39,951

Douglas J. Crisman (Reg. No.)

MORGAN, LEWIS & BOCKIUS LLP
1400 Page Mill Road
Palo Alto, CA 94304
(650) 843-4000

CSC ServiceWorks – Ex. 1002
Page 143 of 367

Electronically Filed: March 15, 2018

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:	Paresh K. Patel	Confirmation No.:	1006
Serial No.:	15/878,352	Art Unit:	2876
Filed:	January 23, 2018	Examiner:	To be assigned
For:	Method and System for An Offline-Payment Operated Machine to Accept Electronic Payments	Attorney Docket No:	104402-5035-US

RESPONSE TO NOTICE TO FILE CORRECTED APPLICATION PAPERS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir/Madam:

In response to the Notice to File Corrected Application Papers, mailed February 20, 2018, enclosed is the Notice to File Corrected Application Papers and replacement sheets for Figures 8C-9E. Amendments to the Drawings begin on Page 2 of this paper and include attached replacement sheets.

Appendix A includes replacement drawing figures and is attached following page 3 of this paper.

The Commissioner is authorized to charge any additional fees or credit any overpayment associated with this communication to Deposit Account No. 50-0310 (order No. 104402-5035-US).

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Amendments to the Drawings:

The attached sheets of drawings replace original sheets of drawings for Figures 8C-9E.

Attachment: **Appendix A** – Replacement Sheets for Figures 8C-9E.

CSC ServiceWorks – Ex. 1002
Page 145 of 367

REMARKS

Please enter the amendments and remarks into the above identified application. No new matter has been added.

Respectfully submitted,

Date: March 15, 2018

/Douglas J. Crisman/ 39,951

Douglas Crisman (Reg. No.)

MORGAN, LEWIS & BOCKIUS LLP
1400 Page Mill Road
Palo Alto, CA 94304
(650) 843-4000

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APPENDIX A

REPLACEMENT DRAWINGS

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/878,352	01/23/2018	Paresh K. Patel	104402-5035-US

CONFIRMATION NO. 1006

24341
Morgan, Lewis & Bockius LLP (PA)
1400 Page Mill Road
Palo Alto, CA 94304-1124

FORMALITIES LETTER

OC000000097478050

Date Mailed: 02/20/2018

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Filing Date Granted

An application number and filing date have been accorded to this application. The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given TWO MONTHS from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
  - The drawings submitted to the Office are not electronically reproducible because portions of figures 8C-9E are missing and/or blurry.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

CSC ServiceWorks – Ex. 1002
Page 148 of 367

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

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P.O. Box 1450
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/tnguyen/

CSC ServiceWorks – Ex. 1002
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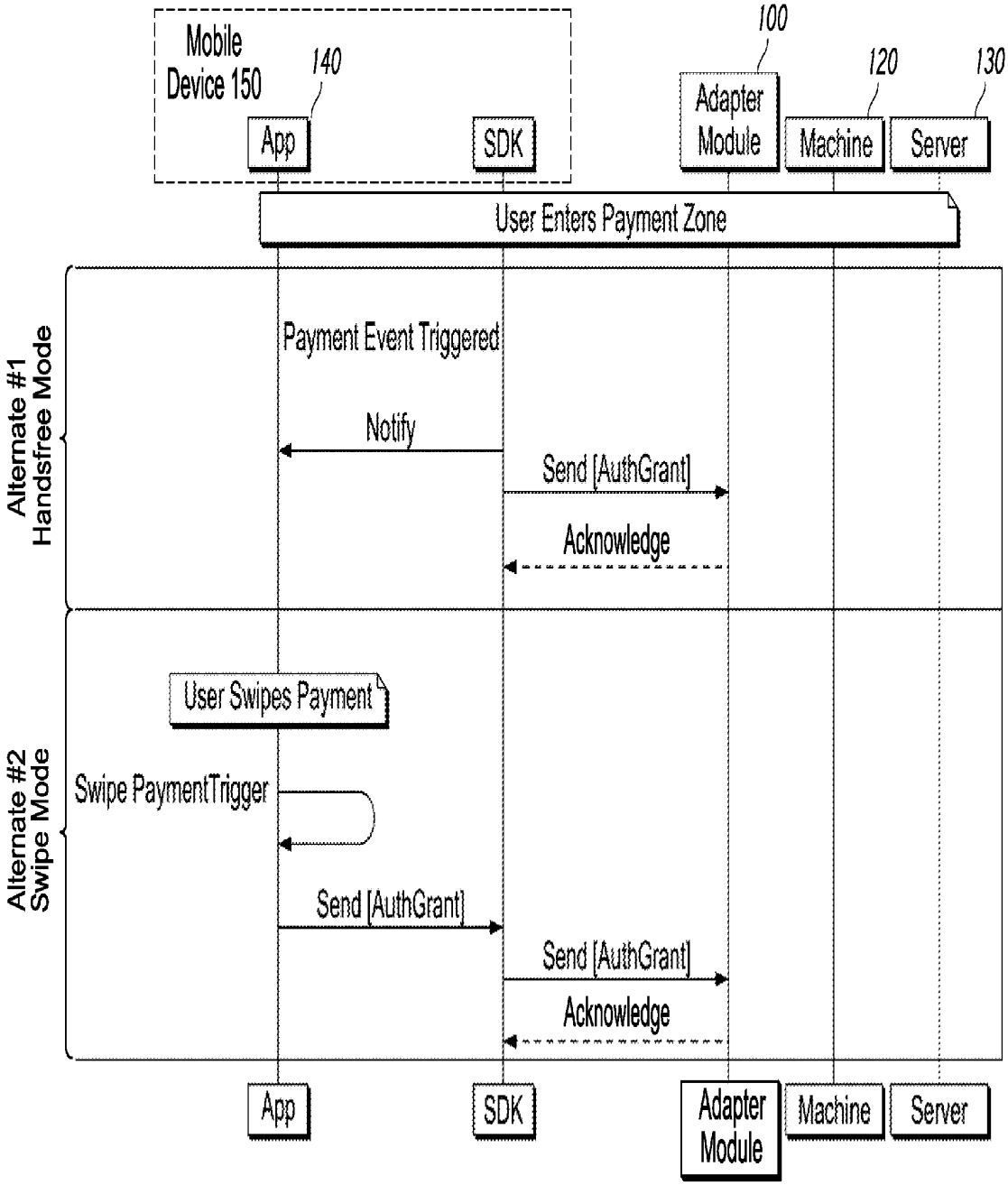

Mobile Device 150
140
App
SDK
100
Adapter Module
120
Machine
130
Server
User Enters Payment Zone
Alternate #1 Handsfree Mode
Payment Event Triggered
Notify
Send [AuthGrant]
Acknowledge
Alternate #2 Swipe Mode
User Swipes Payment
Swipe PaymentTrigger
Send [AuthGrant]
Send [AuthGrant]
Acknowledge
App
SDK
Adapter Module
Machine
Server

FIG. 8C

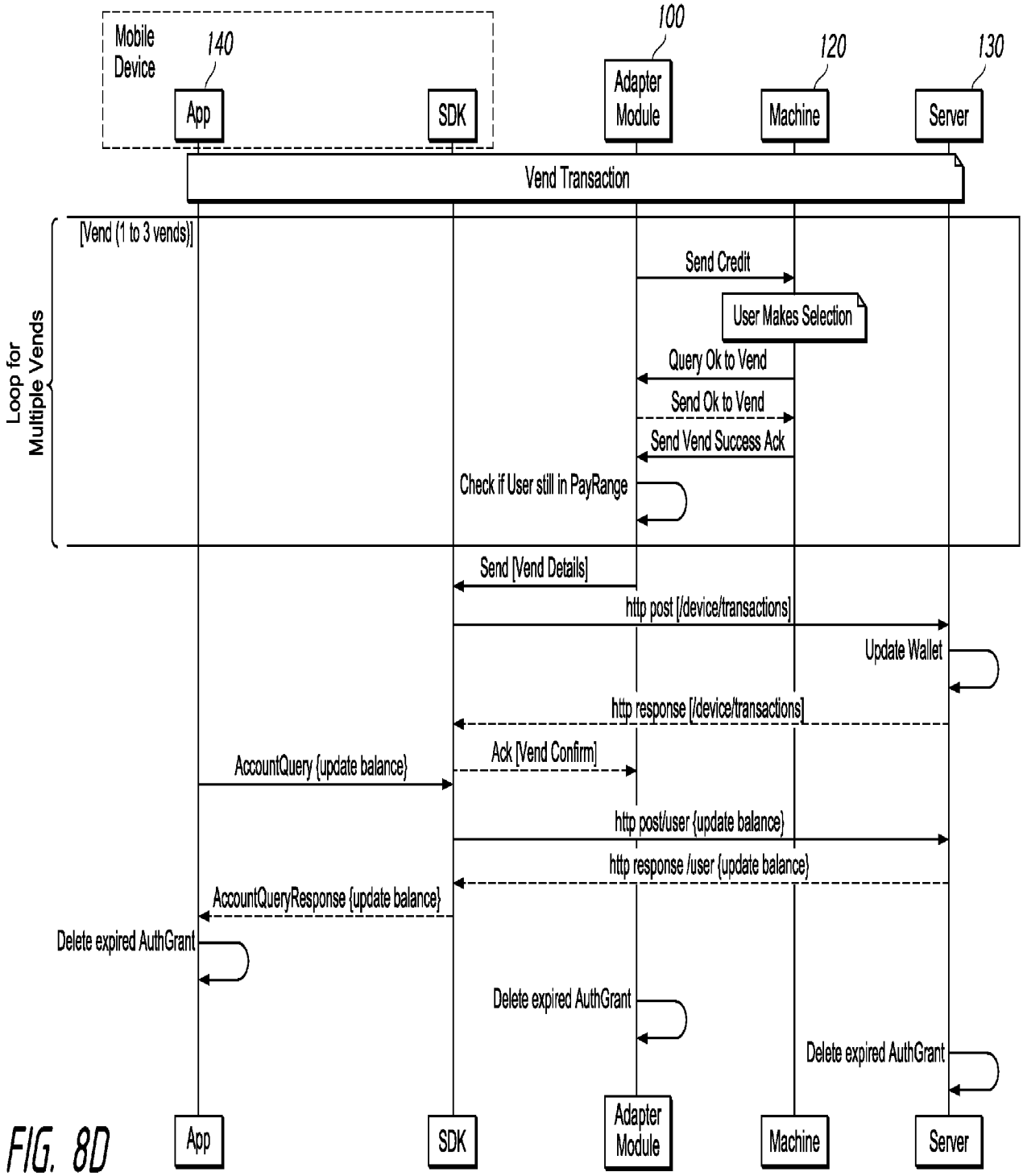

Mobile Device
140
100
120
130
App
SDK
Adapter Module
Machine
Server
Vend Transaction
[Vend (1 to 3 vends)]
Loop for Multiple Vends
Send Credit
User Makes Selection
Query Ok to Vend
Send Ok to Vend
Send Vend Success Ack
Check if User still in PayRange
Send [Vend Details]
http post [/device/transactions]
Update Wallet
http response [/device/transactions]
AccountQuery {update balance}
Ack [Vend Confirm]
http post/user {update balance}
http response /user {update balance}
AccountQueryResponse {update balance}
Delete expired AuthGrant
Delete expired AuthGrant
Delete expired AuthGrant
App
SDK
Adapter Module
Machine
Server

FIG. 8D

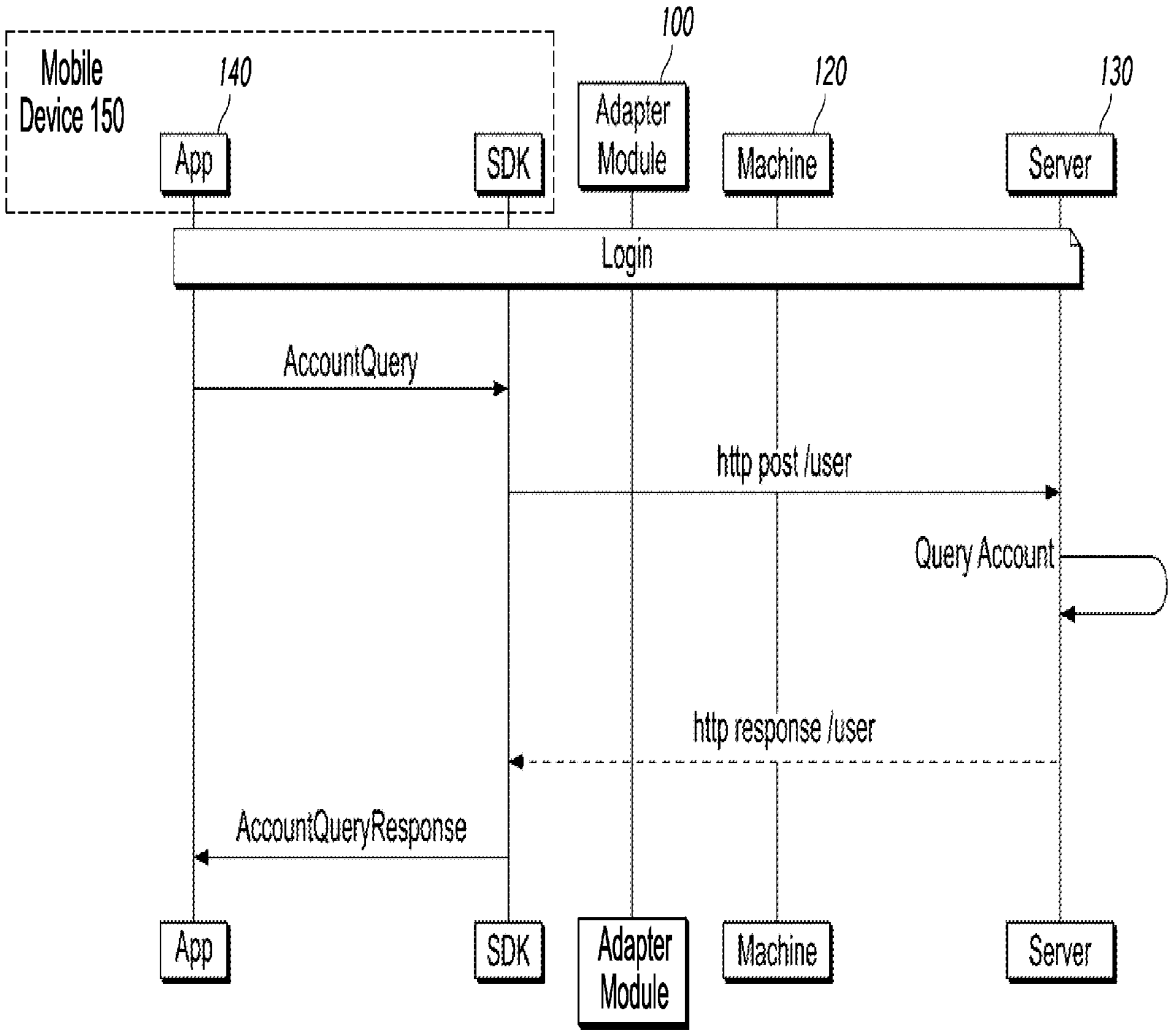

Mobile Device 150
140
App
SDK
100
Adapter Module
120
Machine
130
Server
Login
AccountQuery
http post /user
Query Account
http response /user
AccountQueryResponse
App
SDK
Adapter Module
Machine
Server

FIG. 8E

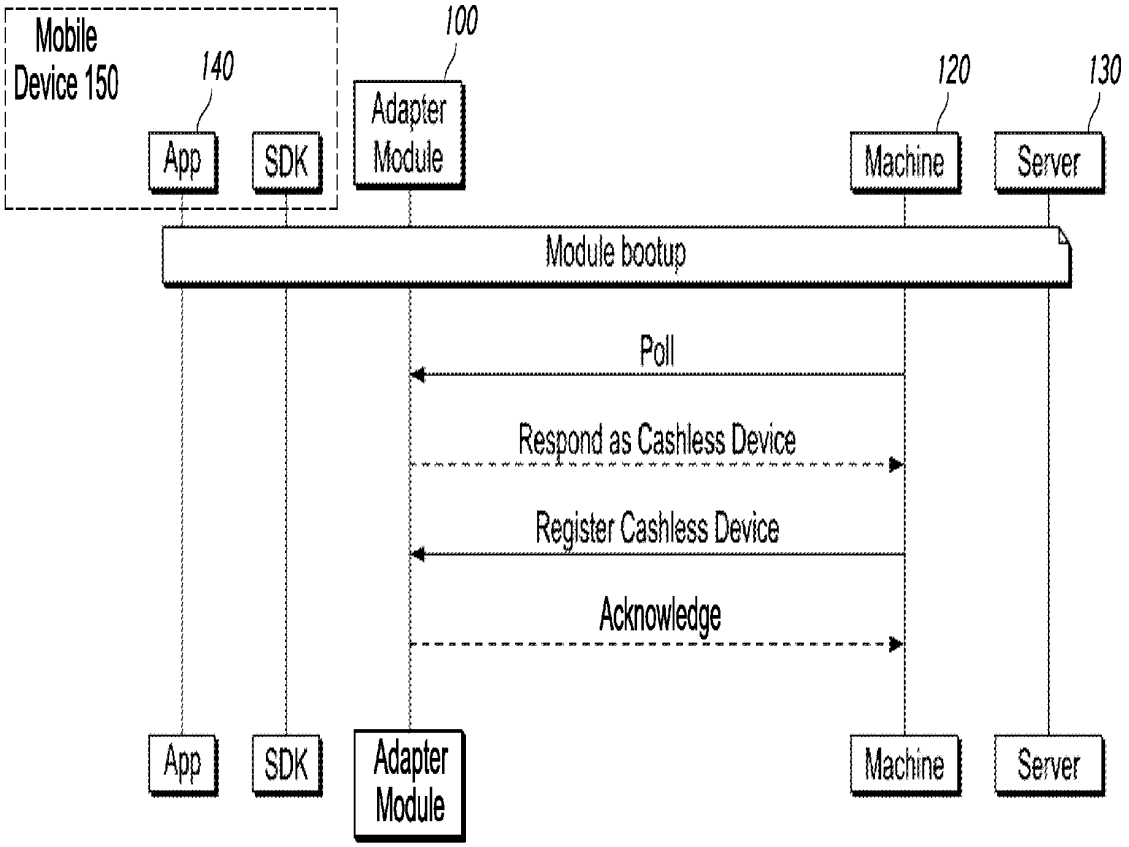

Mobile Device 150
140
App
SDK
100
Adapter Module
120
Machine
130
Server
Module bootup
Poll
Respond as Cashless Device
Register Cashless Device
Acknowledge
App
SDK
Adapter Module
Machine
Server

FIG. 8F

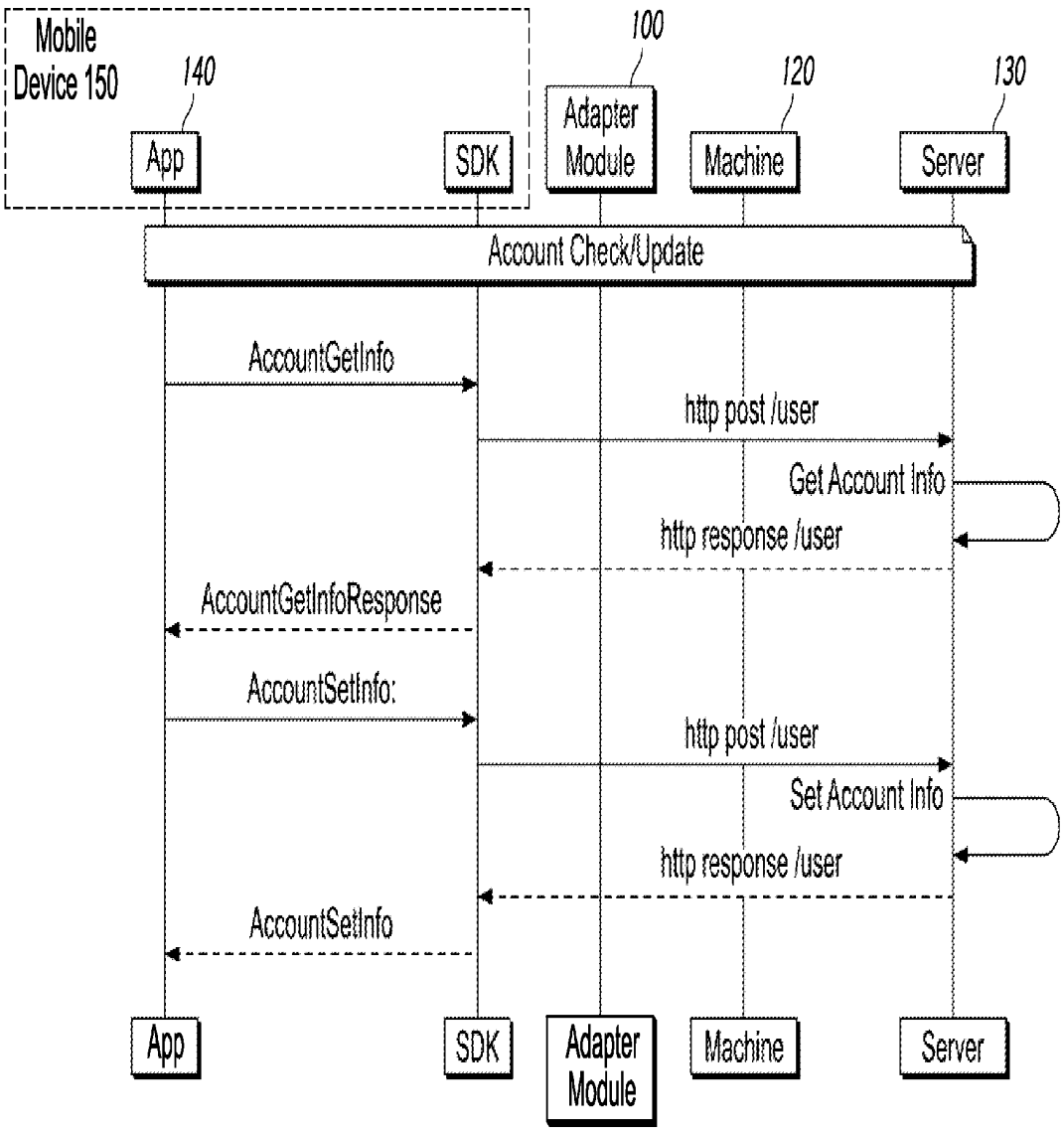

Mobile Device 150
140
App
SDK
100
Adapter Module
120
Machine
130
Server
Account Check/Update
AccountGetInfo
http post /user
Get Account Info
http response /user
AccountGetInfoResponse
AccountSetInfo:
http post /user
Set Account Info
http response /user
AccountSetInfo
App
SDK
Adapter Module
Machine
Server

FIG. 8G

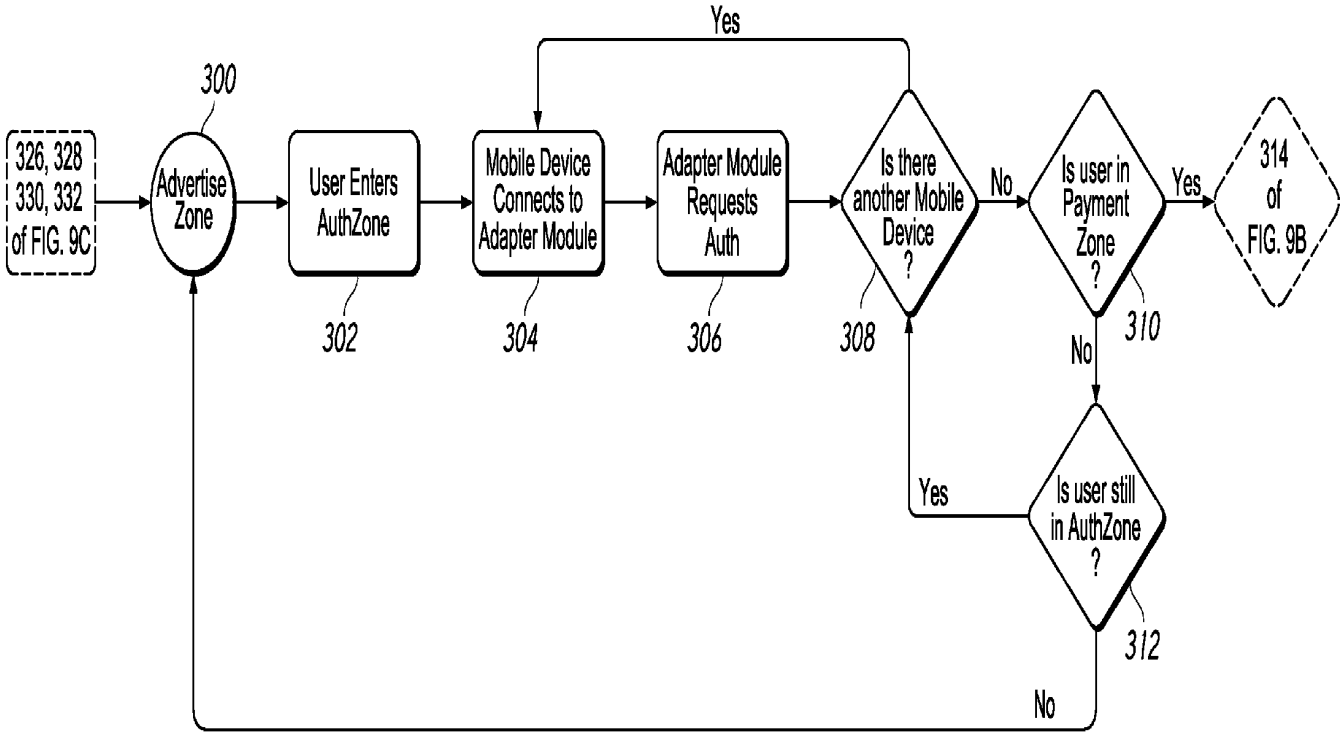

326, 328
330, 332
of FIG. 9C
300
Advertise Zone
User Enters AuthZone
302
Mobile Device Connects to Adapter Module
304
Adapter Module Requests Auth
306
Is there another Mobile Device ?
308
Yes
No
Is user in Payment Zone ?
310
Yes
314
of
FIG. 9B
No
Is user still in AuthZone ?
312
Yes
No

FIG. 9A

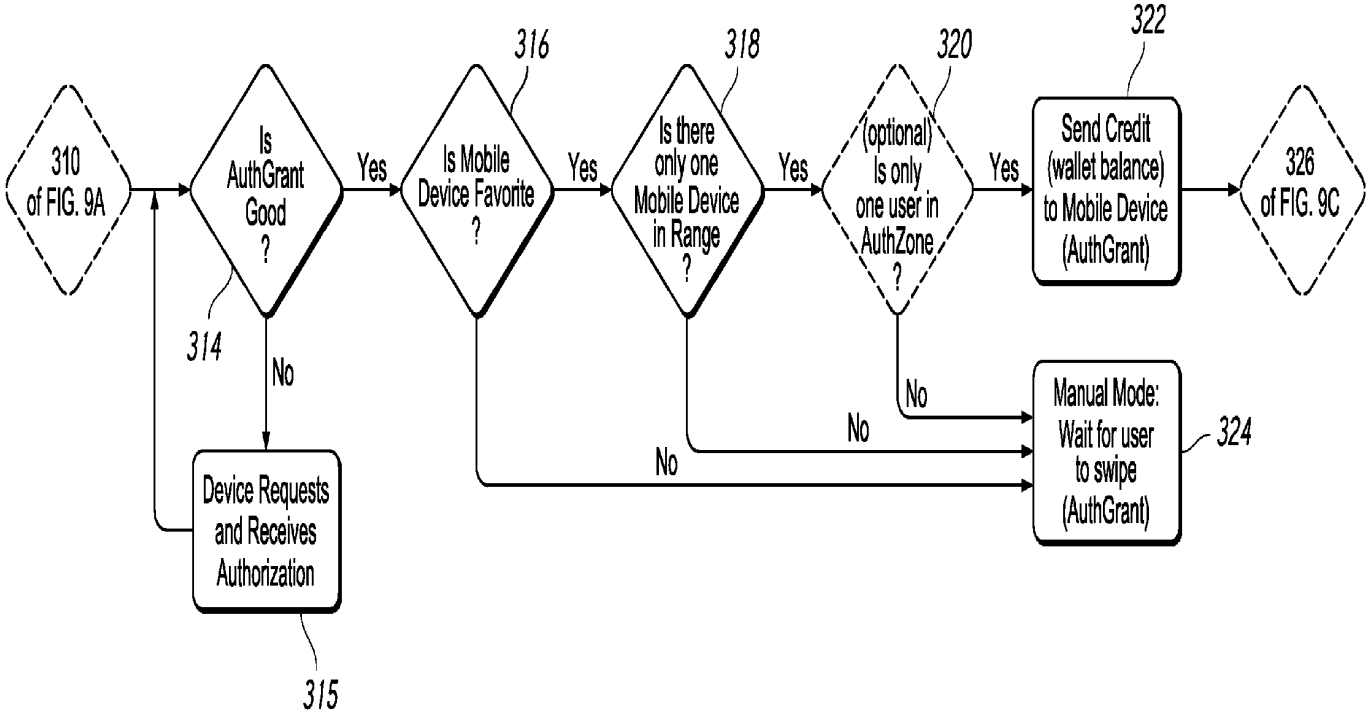
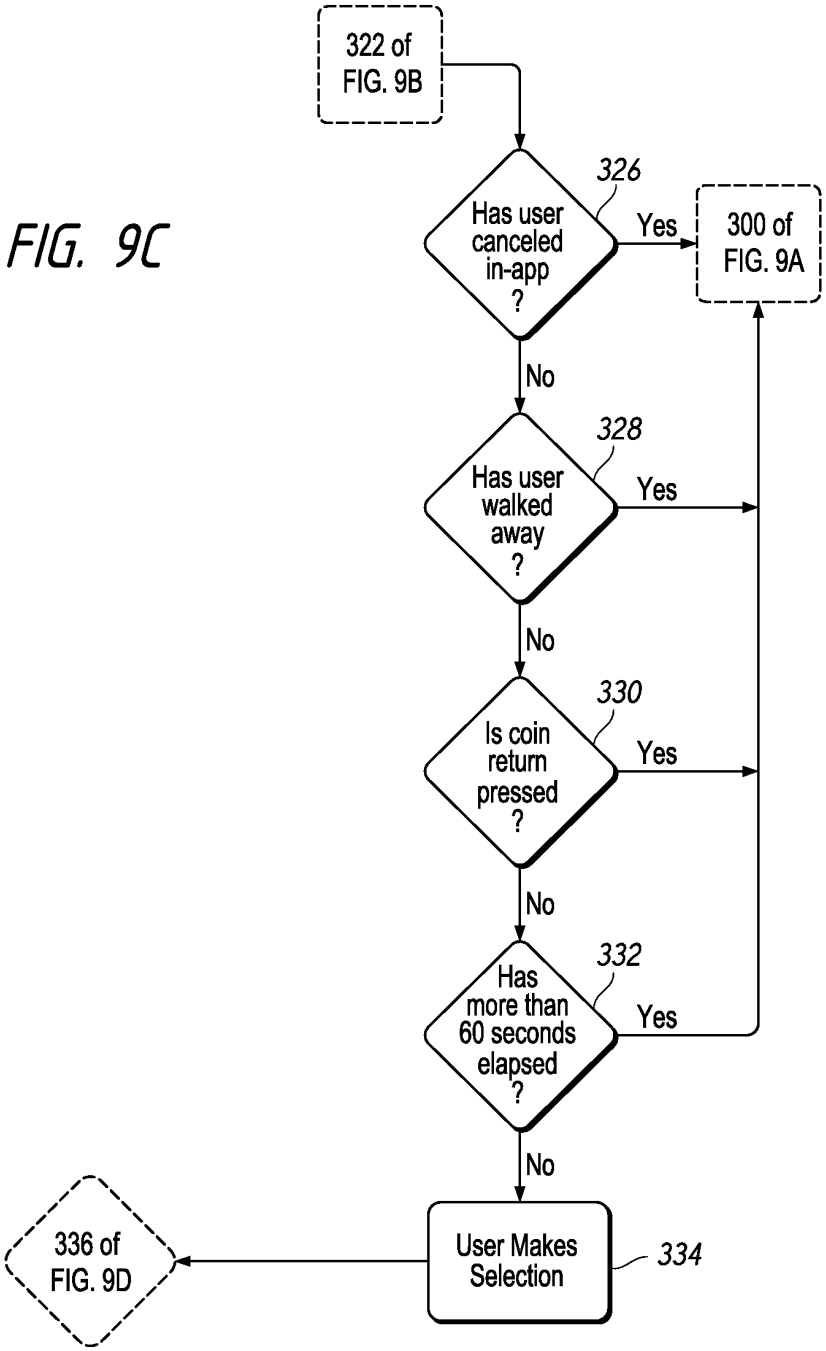

310 of FIG. 9A
Is AuthGrant Good ?
314
Yes
No
Device Requests and Receives Authorization
315
316
Is Mobile Device Favorite ?
Yes
No
318
Is there only one Mobile Device in Range ?
Yes
No
320
(optional) Is only one user in AuthZone ?
Yes
No
322
Send Credit (wallet balance) to Mobile Device (AuthGrant)
326 of FIG. 9C
Manual Mode: Wait for user to swipe (AuthGrant)
324

FIG. 9B

FIG. 9C


322 of FIG. 9B
326
Has user canceled in-app ?
Yes
300 of FIG. 9A
No
328
Has user walked away ?
Yes
No
330
Is coin return pressed ?
Yes
No
332
Has more than 60 seconds elapsed ?
Yes
No
User Makes Selection
334
336 of FIG. 9D

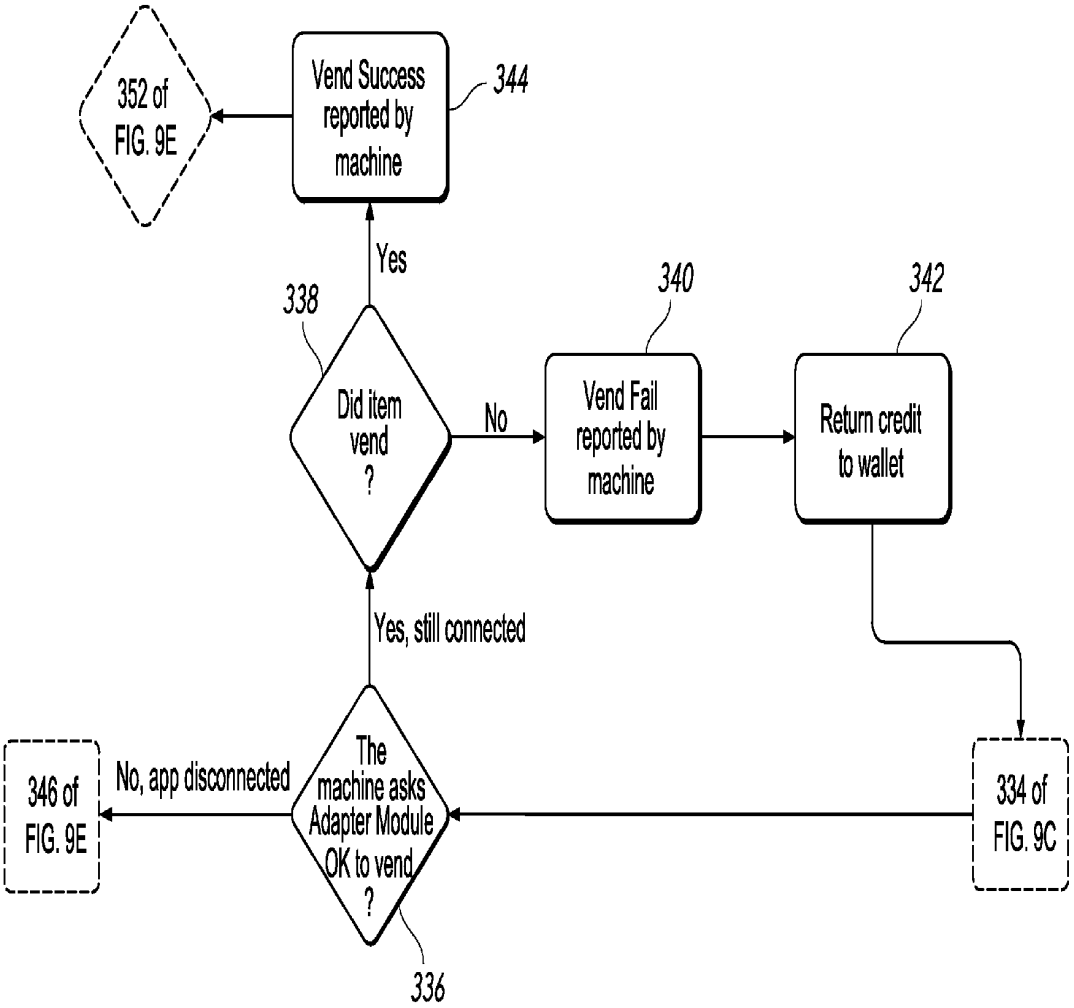

352 of FIG. 9E
Vend Success reported by machine
344
Yes
338
Did item vend ?
No
340
Vend Fail reported by machine
342
Return credit to wallet
Yes, still connected
346 of FIG. 9E
No, app disconnected
The machine asks Adapter Module OK to vend ?
336
334 of FIG. 9C

FIG. 9D

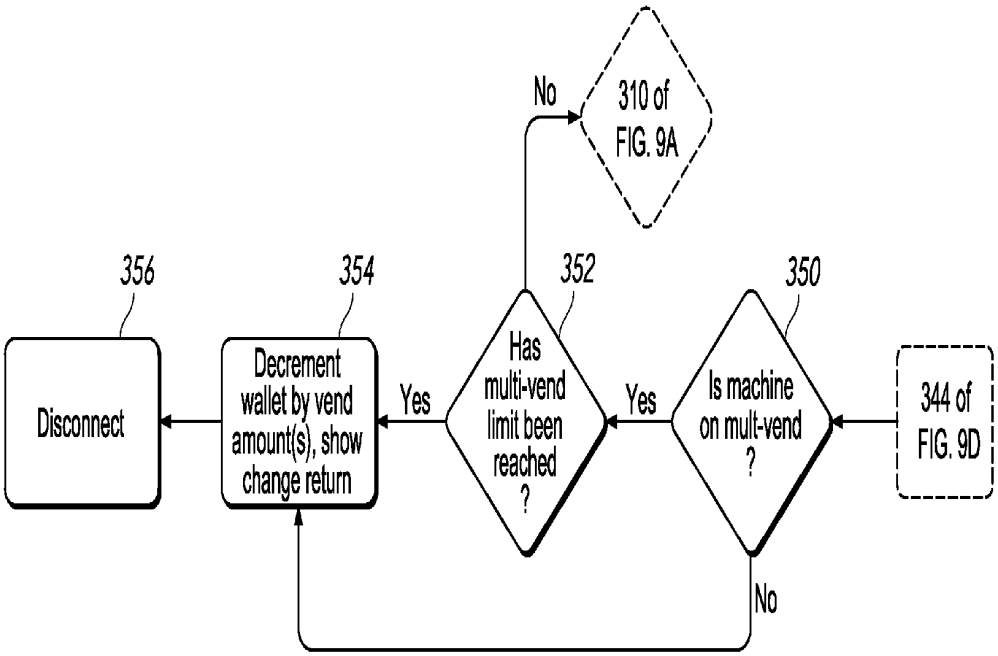

No
310 of FIG. 9A
356
354
352
350
Disconnect
Decrement wallet by vend amount(s), show change return
Yes
Has multi-vend limit been reached ?
Yes
Is machine on mult-vend ?
344 of FIG. 9D
No

FIG. 9E

Electronic Acknowledgement Receipt

EFS ID:	32068989
Application Number:	15878352
International Application Number:	
Confirmation Number:	1006
Title of Invention:	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS
First Named Inventor/Applicant Name:	Paresh K. Patel
Customer Number:	24341
Filer:	Douglas James Crisman
Filer Authorized By:	
Attorney Docket Number:	104402-5035-US
Receipt Date:	15-MAR-2018
Filing Date:	23-JAN-2018
Time Stamp:	18:13:42
Application Type:	Utility under 35 USC 111(a)

Payment information:

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		104402-5035-US_PreliminaryAmendment.pdf	125545 117e4c0533ebbb2023bd3aa028068851d13155ef	yes	3

	Multipart Description/PDF files in .zip description			
	Document Description	**Start**	**End**	
	Preliminary Amendment	1	1	
	Abstract	2	2	
	Applicant Arguments/Remarks Made in an Amendment	3	3	
Warnings:				
Information:				
2	Applicant Response to Pre-Exam Formalities Notice	104402-5035-US_ResponsetoNoticetoFileCorrectedAppPapers.pdf	105506 80cacaeacced1db3d7e3a81de60e455046b762fb	no	4
Warnings:					
Information:					
3	Applicant Response to Pre-Exam Formalities Notice	104402-5035-US_CopyofNoticeTFCAP.pdf	466598 486bd98b6015181215ed46fc96ef964902c1f7cc	no	2
Warnings:					
Information:					
4	Drawings-only black and white line drawings	104402-5035-US_ReplacementFigs.pdf	698276 5710427404 3c9b4025d7961b7cb915952ccc4d84	no	10
Warnings:					
Information:					
		Total Files Size (in bytes):	1395925		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
15/878,352	01/23/2018	2876	1015	104402-5035-US	20	4

CONFIRMATION NO. 1006

UPDATED FILING RECEIPT

24341
Morgan, Lewis & Bockius LLP (PA)
1400 Page Mill Road
Palo Alto, CA 94304-1124

OC000000098148330

Date Mailed: 03/20/2018

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Paresh K. Patel, Portland, OR;

Applicant(s)

Payrange Inc., Portland, OR;

Power of Attorney: The patent practitioners associated with Customer Number 24341

Domestic Priority data as claimed by applicant

This application is a CON of 14/458,192 08/12/2014 PAT 9875473
which is a CIP of 14/456,683 08/11/2014 PAT 9256873
which is a CON of 14/335,762 07/18/2014 PAT 9547859
which is a CON of 14/214,644 03/14/2014 PAT 8856045
which claims benefit of 61/917,936 12/18/2013
and is a CIP of 29/477,025 12/18/2013 PAT D755183

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 02/15/2018
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/878,352**
Projected Publication Date: 06/28/2018
Non-Publication Request: No
Early Publication Request: No
** **SMALL ENTITY** **
Title

METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS

Preliminary Class

235

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

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SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 15/878,352

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	75		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	330		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	380		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*	x 50 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1	x 230 =	230			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	1015		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)		OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/878,352	01/23/2018	Paresh K. Patel	104402-5035-US

CONFIRMATION NO. 1006

24341
Morgan, Lewis & Bockius LLP (PA)
1400 Page Mill Road
Palo Alto, CA 94304-1124

PUBLICATION NOTICE

OC000000100622432

Title:METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS

Publication No.US-2018-0181945-A1
Publication Date:06/28/2018

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently https://portal.uspto.gov/pair/PublicPair. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

PLUS Search Results for S/N 15878352, Searched Thu Nov 21 17:02:44 EST 2019

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

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PLUS Search Results for S/N 15878352, Searched Tue Nov 26 09:33:18 EST 2019

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

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PLUS Search Results for S/N 15878352, Searched Tue Nov 26 09:33:14 EST 2019

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

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PLUS Search Results for S/N 15878352, Searched Thu Jan 02 17:02:07 EST 2020

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

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20140156315 84
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PLUS Search Results for S/N 15878352, Searched Thu Jan 02 17:02:09 EST 2020

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/878,352	01/23/2018	Paresh K. Patel	104402-5035-US	1006

24341 7590 01/24/2020
Morgan, Lewis & Bockius LLP (PA)
1400 Page Mill Road
Palo Alto, CA 94304-1124

EXAMINER	
HOLLY, JOHN H	

ART UNIT	PAPER NUMBER
3696	

NOTIFICATION DATE	DELIVERY MODE
01/24/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

padocketingdepartment@morganlewis.com
vskliba@morganlewis.com

Office Action Summary	**Application No.** 15/878,352	**Applicant(s)** Patel, Paresh K.	
	Examiner JOHN H HOLLY	**Art Unit** 3696	**AIA (FITF) Status** Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on January 23, 2018.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-20 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-20 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

This Office Action is in response to Applicant's communication filed on January 23, 2018 for the patent application 15/878,352. Claims 1 – 20 are pending in the application.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. **Claim(s) 1 – 20 are rejected under 35 U.S.C. § 101** because the claimed invention is directed to an abstract idea without significantly more.

Claims 1 - 20 are either directed to a method or system or computer readable medium, which are statutory categories of invention. (Step 1: YES).

The Examiner has identified method Claim 7 as the claim that represents the claimed invention for analysis and is similar to apparatus Claim 1 and computer readable claim 13. Claim 7 recites the limitations of:

> (A) at **a payment module** with one or more **processor**s, **memory, a short-range wireless transceiver** configured to communicate with one or more **mobile devices**, **a first interface module** configured to output to **a control unit** of **the offline payment-operated machine** one or more electrical

pulses, each of the one or more electrical pulses emulating an analog signal generated by the coin receiving switch of **the offline payment-operated machine** in response to insertion of a single coin of a predetermined type in **the offline payment-operated machine**:

(B) receiving a wireless request via **the short-range wireless transceiver** from a respective **mobile device** of the one or **more mobile devices** to initiate a cashless operation of **the offline-payment operated machine**;

(C) in response to the wireless request:

- causing the **offline payment-operated machine** to initiate the requested cashless operation by issuing a first number of electrical pulses to **the control unit** via **the first interface module**; and
- sending operation information corresponding to the initiated operation of **the offline payment-operated machine** to the respective mobile device via **the short-range wireless transceiver**.

These limitations without the **bolded** limitations above, cover performance of the limitations as certain methods of organizing human activity under their broadest reasonable interpretation.

More specifically, these limitations cover performance of the limitations as a fundamental economic practice such as mitigating transaction risk.

In summary, if claim 7 limitations, under its broadest reasonable interpretation, covers performance of the limitation as a fundamental economic practice, then it falls within the "Certain Methods of Organizing Human Activity" grouping of abstract ideas. Accordingly, the claim recites an abstract idea. Claims 1 and 13 are also abstract for similar reasons. (Step 2A-Prong 1: YES. The claims are abstract).

The use of the interface or any of the bolded limitations in claim 7 are just applying generic computer components to the recited abstract limitations. Similar arguments apply to claims 1 and 13.

Therefore, the above mentioned judicial exception is not integrated into a practical application by merely applying generic computer components (bolded elements).

Furthermore, the “receiving” and “sending” steps are recited at a high level of generality and amounts to mere data gathering, which is a form of extra-solution activity.

In addition, supported by specification, the computer hardware are recited at a high-level of generality (i.e., as a generic processor performing a generic computer function) such that it amounts no more than mere instructions to apply the exception using a generic computer component., see MPEP 2106.05(f), where applying a computer or using a computer is not indicative of a practical application).

Claim 7, limitation (A) above in Applicant’s specification para [0056], which discloses “Easy Installation: Installation is very easy, requires no tools, requires no configuration, and takes as little as **30** seconds. This is accomplished by using an adapter module **100** (sometimes also herein called "**payment module 100")** such as an in-line dongle (a hardware device with software thereon) design for in-line insertion within a multi-drop bus (MD8) of a payment accepting unit **120** (e.g., a vending machine) (sometimes also herein called 'the machine **120").** Installation is as simple as "powering down" (turning off) the machine **120,** identifying the "wire" that connects with a payment receiving mechanism (e.g., the coin mechanism), disconnecting the wire (so that there are two loose ends, such as a male connection end or adapter of an MD8 and a female connection end or adapter of an MD8), plugging (inserting) the adapter module **100** in serial ("in-line") with the wire (e.g., connecting the MD8 female adapter to a male adapter of the adapter module **100** and connecting the MD8 male adapter to a female

adapter of the adapter module **100),** tucking the wire and the installed adapter module **100** back into position, and "powering up" (turning on) the machine **120.**".

Also, claim 7, limitation (A) - (C) above in Applicant's specification para [abstract], which discloses "This application discloses a payment module with one or more processors, memory, a **short-range wireless transceiver** configured to communicate with one or more mobile devices, and a first interface module configured to output to a control unit of the oflline payment-operated machine one or more electrical pulses. The payment module receives a wireless request via the short-range wireless transceiver from a respective mobile device of the one or more mobile devices to initiate a cashless operation of the oflline-pay- ment operated machine.".

Also, claim 7, limitation (A) and (B) above in Applicant's specification para [0062], [0065], which discloses "**Mobile Device 150** and Application **140** (also referred to as a "mobile application," "mobile app," or "app"): In general, a mobile device **150** may be a user's personal mobile device **150.** The mobile device **150** (with a mobile application **140** thereon) acts as a communication bridge between the adapter module **100** (associated with a payment accepting unit **120)** and the server **130.** The mobile device **150** and the application **140,** however, are not "trusted" in that the communications (transmissions) it passes are encrypted. Encrypted (secured) communications are undecipherable (unencryptable, unreadable, and/or unu-seable) by the mobile device **150.**".

Also, claim 7, limitation (A) and (C) above in Applicant's specification para [0210], which discloses "In some implementations, the payment module is coupled with an oflline-payment operated machine (e.g., the payment accepting unit 120, FIGS. 5 and 19 (sometimes also herein called "machine 120"), or the oflline-payment operated machine 1500, FIG. 28A) such as dryer or washer in a laundromat, a parking meter, a

car wash payment kiosk, or the like. In some implementations, the oflline-payment operated machine includes a coin receiving switch (e.g., the microswitch 1502, FIG. 28A) and a control unit (e.g., the control unit 1506, FIG. 28A). In some implementations, the payment module further includes: (A) a first interface mod- ule (e.g., **the first interface module 1522,** FIG. **28A)** con- figured to sample payment acceptance signals from the coin receiving switch of the oflline-payment operated machine, where the signals are indicative of a coin being received by the coin receiving switch.".

Also, claim 7, limitation (A) - (C) above in Applicant's specification para [0009], which discloses "In some implementations, a method of retrofitting **an offline-payment operated machine** to accept electronic payments is performed at a payment module (e.g., the adapter module **100,** FIGS. **5** and **20)** with one or more processors, memory, a short-range communication capability (e.g., a short-range communication technology/protocol such as BLE), and a first interface module configured to couple the payment module with a control unit of an offline-payment operated machine (e.g., the payment accepting unit **120,** FIGS. **5 and 19)** (sometimes also herein called machine **120").**". Similar arguments apply to claims 1 and 13.

Accordingly, these additional elements, when considered separately and as an ordered combination, do not integrate the abstract idea into a practical application because they do not impose any meaningful limits on practicing the abstract idea.

Therefore, Claims 1, 7 and 13 are directed to an abstract idea without a practical application. (Step 2A-Prong 2: NO. The additional claimed elements are not integrated into a practical application).

The claims 1 , 7 and 13 do not include additional elements that are sufficient to amount to significantly more than the judicial exception because, when considered separately and as an ordered combination, they do not add significantly more (also known as an "inventive concept") to the exception. As discussed above with respect to integration of the abstract idea into a practical application, the additional elements (bolded elements above) amount to no more than mere instructions to apply the abstract idea using generic computer components. In conclusion, merely "applying" the exception using generic computer components cannot provide an inventive concept. Therefore, the claims 1, 7, and 13 are not patent eligible under 35 USC 101. (Step 2B: NO. The claims do not provide significantly more).

In reference to 2 - 6, 8 - 12 and 14 - 20 these dependent claims further define the abstract idea that is present in their respective independent claims 1, 7 and 13, thus correspond to Certain Methods of Organizing Human Activity and hence are abstract for the reasons presented above. However, they do not cure the deficiencies of claims 1, 7 and 13. The dependent claims do not include any additional elements that integrate the abstract idea into a practical application or are sufficient to amount to significantly more than the judicial exception when considered both individually and as an ordered combination. Therefore, the claims 1 – 20 are not seen to be statutory.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the claims at issue are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the reference application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP §§ 706.02(l)(1) - 706.02(l)(3) for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/forms/. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to http://www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

Patent No. 9,875,473	Instant Application
Claim 6 (Currently Amended) A method for simulating analog signals generated by	Claim 7.(Original) A method for accepting electronic payments at an offline payment-

a coin receiving switch of an offline payment-operated machine, the method comprising:at a payment module with one or more processors, memory, a short-range wireless transceiver configured to communicate with one or more mobile devices, and a first interface module configured to output to a control unit of the offline payment-operated machine one or more electrical pulses, each of the one or more electrical pulses emulating an analog signal generated by the coin receiving switch of the offline payment-operated machine in response to insertion of a single coin of a predetermined type in the offline payment-operated machine:storing, in the memory of the payment module, one or more characteristics of the analog signal that is generated by the coin receiving switch of the offline payment-operated machine in response to insertion of the single coin in the offline payment-operated machine; storing, in the memory of the payment module, a number of the electrical pulses that must be received by the control unit to initiate an operation of the offline payment operating machine: ~~after storing the one or more characteristics of the analog signal in the memory of the payment module,~~ receiving a wireless request via	operated machine, the method comprising: at a payment module with one or more processors, memory, a short-range wireless transceiver configured to communicate with one or more mobile devices, a first interface module configured to output to a control unit of the offline payment-operated machine one or more electrical pulses, each of the one or more electrical pulses emulating an analog signal generated by the coin receiving switch of the offline payment-operated machine in response to insertion of a single coin of a predetermined type in the offline payment-operated machine: receiving a wireless request via the short-range wireless transceiver from a respective mobile device of the one or more mobile devices to initiate a cashless operation of the offline-payment operated machine; in response to the wireless request: causing the offline payment-operated machine to initiate the requested cashless operation by issuing a first number of electrical pulses to the control unit via the first interface module; and sending operation information corresponding to the initiated operation of the offline payment-operated machine to the respective mobile device via the short-range wireless transceiver.

the short-range wireless transceiver from a respective mobile device of the one or more mobile devices to ~~send a cashless payment to~~ initiate a cashless operation of the offline-payment operated machine; in response to the wireless request, determining, ~~based on a monetary value corresponding to the cashless payment,~~ a first number of electrical pulses to output via the first interface module to the control unit of the offline payment-operated machine in order to initiate the requested cashless operation of the offline payment-operated machine; and in accordance with receiving response to thewireless request, causing the offline payment-operated machine to initiate the requested cashless operation by issuing the ~~determined~~first number of electrical pulses to the control unit, wherein issuing the ~~determined~~ first number of electrical pulses includes issuing the ~~determined~~ first number of electrical pulses with at least one of the one or more characteristics of the analog signal.	

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN H HOLLY whose telephone number is (571)270-3461. The examiner can normally be reached on MON. - FRI 10 AM - 8 PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NAMRATA BOVEJA can be reached on 571-272-6702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John H. Holly/
Primary Examiner, Art Unit 3696

Notice of References Cited	Application/Control No. 15/878,352	Applicant(s)/Patent Under Reexamination Patel, Paresh K.	
	Examiner JOHN H HOLLY	Art Unit 3696	Page 1 of 1

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*	B	US-20090119190-A1	05-2009	Realini; Carol	G06Q20/04	705/30
*	C	US-20090306818-A1	12-2009	Slagley; David O.	G07F9/02	700/232
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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/878,352	Patel, Paresh K.
	Examiner	Art Unit
	JOHN H HOLLY	3696

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	01/15/2020								
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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/878,352	Patel, Paresh K.
	Examiner	Art Unit
	JOHN H HOLLY	3696

CPC - Searched*		
Symbol	Date	Examiner
G06Q 20/40	01/15/2020	John H. Holly

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
705	44, 1.1	01/15/2020	John H. Holly

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
EAST, PLUS, IP.COM	01/15/2020	John H. Holly

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/John H. Holly/ Primary Examiner, Art Unit 3696	

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CONFIRMATION NO. 1006

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
15/878,352	01/23/2018	705	3696	104402-5035-US

APPLICANTS
Payrange Inc., Portland, OR;

INVENTORS
Paresh K. Patel, Portland, OR;

**** CONTINUING DATA ***************************
This application is a CON of 14/458,192 08/12/2014 PAT 9875473
which is a CIP of 14/456,683 08/11/2014 PAT 9256873
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which claims benefit of 61/917,936 12/18/2013
and is a CIP of 29/477,025 12/18/2013 PAT D755183

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
02/15/2018

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☑ Yes ☐ No Verified and Acknowledged /JOHN H HOLLY/ Examiner's Signature	☐ Met after Allowance JHH Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		OR	45	20	4

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1400 Page Mill Road
Palo Alto, CA 94304-1124
UNITED STATES

TITLE
METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS

FILING FEE RECEIVED		
1015	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

BIB (Rev. 05/07).

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	12906	705/44	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/18 22:00
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S15	2379885	(vending OR (parking adj meter$1) OR toll$1 OR laundromat$1 OR game$1 OR (photo adj booth$1) OR dispens$3 OR (payment adj (accept$3 OR operat$3)) OR gaming OR slot$1) near10 (machine$1 OR booth$1 OR unit$1 OR equipment$1 OR device$1 OR apparatus)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 15:01
S16	96654	S15 AND ((H04W72/042 OR H04W72/0446 OR H04W72/0453 OR H04W72/1289 OR H04W76/27 OR H04W24/10 OR H04W72/0413 OR H04W72/1268 OR H04W72/044 OR H04W74/0833 OR H04W76/11 OR H04W24/08 OR H04W36/0085 OR H04W4/40 OR H04W68/02 OR H04W72/082 OR H04W72/1205 OR H04W16/14 OR H04W28/0236 OR H04W28/0278 OR H04W36/08 OR H04W48/16 OR H04W4/021 OR H04W4/023 OR H04W4/029 OR H04W4/70 OR H04W52/146 OR H04W56/001 OR H04W72/1231 OR H04W72/1273 OR H04W72/1284 OR H04W72/14 OR H04W76/28 OR H04W80/08 OR H04W88/06 OR H04W8/18 OR H04W12/06 OR H04W16/18 OR H04W16/28 OR H04W24/02 OR H04W28/021 OR H04W36/0069 OR H04W36/00837 OR H04W36/305 OR H04W40/20 OR H04W48/02 OR H04W48/10 OR H04W4/027 OR H04W4/46 OR H04W52/143 OR H04W52/243 OR H04W52/365 OR H04W52/367 OR H04W72/005 OR H04W72/0406 OR H04W72/046 OR H04W72/048 OR H04W72/085 OR H04W72/121 OR H04W72/1242 OR H04W72/1257 OR H04W74/0808 OR H04W76/14 OR H04W76/15 OR H04W76/19 OR H04W84/12 OR H04W88/04 OR H04W88/08 OR H04W8/005 OR H04W8/26 OR H04W92/18 OR H04W12/00512 OR H04W12/04 OR H04W12/0401 OR H04W12/08 OR H04W12/0802 OR H04W16/12 OR H04W16/26 OR H04W24/04 OR H04W28/0205 OR H04W28/0242 OR H04W28/0268 OR H04W28/0284 OR	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 15:02

		H04W28/0289 OR H04W28/06 OR H04W28/14 OR H04W28/26 OR H04W36/0016 OR H04W36/0033 OR H04W36/0055 OR H04W36/0058 OR H04W36/0061 OR H04W36/0072 OR H04W36/0079 OR H04W36/0088 OR H04W36/04 OR H04W36/14 OR H04W36/22 OR H04W36/30 OR H04W48/06 OR H04W48/18 OR H04W4/02 OR H04W4/08 OR H04W4/21 OR H04W4/24 OR H04W4/44 OR H04W4/80 OR H04W52/0216 OR H04W52/228 OR H04W52/241 OR H04W52/242 OR H04W52/244 OR H04W52/325 OR H04W52/343 OR H04W52/346 OR H04W52/362 OR H04W52/38 OR H04W52/386 OR H04W52/48 OR H04W52/54 OR H04W56/0015 OR H04W56/004 OR H04W64/00 OR H04W64/003 OR H04W64/006 OR H04W68/005 OR H04W72/02 OR H04W72/04 OR H04W72/0473 OR H04W72/0486 OR H04W72/0493 OR H04W72/10 OR H04W72/12 OR H04W72/1215 OR H04W72/1226 OR H04W74/0816 OR H04W74/0825 OR H04W74/0841 OR H04W76/10 OR H04W76/12 OR H04W76/16 OR H04W76/18 OR H04W76/30 OR H04W76/34 OR H04W84/005 OR H04W84/18 OR H04W88/02 OR H04W88/023 OR H04W88/12 OR H04W8/08 OR H04W8/183 OR H04W8/205 OR H04W8/30 OR H04W92/10).CPC.)				
S17	4908180	(nearfield OR wireless$2 OR WiFi OR Wi-Fi OR Bluetooth$1 OR (blue adj tooth$1) OR NFC OR (short adj range) OR short adj wavelength$1 OR BLE OR nearfield OR WAN)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 15:06
S18	634494	S17 AND ((H04W72/042 OR H04W72/0453 OR H04W72/1268 OR H04W72/0446 OR H04W76/27 OR H04W72/1273 OR H04W74/0808 OR H04W74/0833 OR H04W76/15 OR H04W80/02 OR H04W4/80 OR H04W72/1289 OR H04W76/11 OR H04W88/08 OR H04W48/16 OR H04W72/0413 OR H04W84/12 OR H04W16/14 OR H04W72/1284 OR H04W76/10 OR H04W76/16 OR H04W76/19 OR H04W88/06 OR H04W24/10 OR H04W72/04 OR H04W72/0493 OR H04W72/082 OR H04W72/085 OR H04W72/1205 OR H04W76/12 OR H04W76/14 OR H04W76/20 OR H04W76/25 OR H04W76/28 OR H04W84/045 OR H04W84/18 OR H04W88/02 OR H04W88/04 OR H04W16/26 OR H04W16/28 OR H04W28/0236 OR H04W28/0268 OR H04W28/0278 OR	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 15:07

		H04W28/12 OR H04W36/14 OR H04W36/30 OR H04W40/24 OR H04W4/40 OR H04W4/44 OR H04W4/70 OR H04W56/001 OR H04W72/046 OR H04W72/0466 OR H04W72/048 OR H04W72/10 OR H04W72/12 OR H04W72/121 OR H04W72/1231 OR H04W72/1242 OR H04W72/1257 OR H04W72/1263 OR H04W72/14 OR H04W74/006 OR H04W74/02 OR H04W74/0866 OR H04W76/30 OR H04W80/10 OR H04W88/023 OR H04W88/10 OR H04W88/16 OR H04W8/08 OR H04W92/10 OR H04W92/20 OR H04W12/04 OR H04W12/0401 OR H04W12/04031 OR H04W24/08 OR H04W28/00 OR H04W28/021 OR H04W28/0252 OR H04W28/06 OR H04W28/085 OR H04W28/10 OR H04W28/14 OR H04W28/18 OR H04W36/0005 OR H04W36/0069 OR H04W36/0077 OR H04W36/06 OR H04W36/08 OR H04W36/22 OR H04W36/24 OR H04W40/20 OR H04W48/18 OR H04W4/027 OR H04W4/029 OR H04W4/21 OR H04W4/46 OR H04W4/48 OR H04W4/90 OR H04W52/02 OR H04W52/0216 OR H04W52/0229 OR H04W52/0235 OR H04W52/146 OR H04W52/367 OR H04W52/54 OR H04W56/00 OR H04W68/005 OR H04W68/02 OR H04W72/0426 OR H04W72/044 OR H04W72/0486 OR H04W72/1215 OR H04W72/1226 OR H04W74/002 OR H04W74/0816 OR H04W74/0825 OR H04W74/0841 OR H04W76/22 OR H04W76/34 OR H04W76/36 OR H04W76/45 OR H04W80/04 OR H04W80/08 OR H04W88/085 OR H04W88/12 OR H04W88/14 OR H04W88/18 OR H04W8/005 OR H04W8/02 OR H04W8/04 OR H04W8/24 OR H04W92/18).CPC.)				
S19	542308	S15 and S17	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 15:10
S20	5026013	(receiv$3 OR collect$3 OR gather$3 OR obtain$3 OR get$1 OR getting OR attain$3 OR acquir$3) near10 (request$3 OR input$3 OR interact$4 OR attempt$1 OR ((ask$3 OR apply$3) adj for) OR demand$3 OR inquir$3 OR petition$2 OR demand$2 OR solict$3 OR enquir$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 15:13
S21	289445	S20 AND ((H04W72/042 OR H04W76/27 OR H04W72/0413 OR H04W72/0446 OR H04W74/0833 OR	US-PGPUB; USPAT;	OR	ON	2020/01/20 15:15

		H04W80/02 OR H04W72/0453 OR H04W72/1268 OR H04W68/02 OR H04W76/11 OR H04W72/04 OR H04W72/044 OR H04W72/1273 OR H04W72/1284 OR H04W72/1289 OR H04W76/15 OR H04W88/02 OR H04W16/14 OR H04W48/16 OR H04W4/80 OR H04W72/048 OR H04W76/10 OR H04W76/14 OR H04W88/04 OR H04W88/08 OR H04W24/10 OR H04W52/0229 OR H04W52/146 OR H04W72/02 OR H04W72/0466 OR H04W72/082 OR H04W72/085 OR H04W72/10 OR H04W72/1205 OR H04W76/12 OR H04W76/16 OR H04W76/19 OR H04W76/28 OR H04W84/045 OR H04W84/12 OR H04W84/18 OR H04W88/06 OR H04W16/28 OR H04W24/08 OR H04W28/0268 OR H04W28/0278 OR H04W28/06 OR H04W48/18 OR H04W4/70 OR H04W52/143 OR H04W60/005 OR H04W72/046 OR H04W72/0493 OR H04W72/12 OR H04W72/1263 OR H04W72/14 OR H04W74/006 OR H04W74/02 OR H04W74/0808 OR H04W76/30 OR H04W80/08 OR H04W80/10 OR H04W88/023 OR H04W88/16 OR H04W8/02 OR H04W8/08 OR H04W92/18 OR H04W92/20 OR H04W12/0401 OR H04W16/26 OR H04W28/0236 OR H04W28/0252 OR H04W28/085 OR H04W28/10 OR H04W28/12 OR H04W28/18 OR H04W36/0005 OR H04W36/0066 OR H04W36/0069 OR H04W36/0077 OR H04W36/0088 OR H04W36/06 OR H04W36/08 OR H04W36/22 OR H04W40/20 OR H04W48/08 OR H04W4/06 OR H04W4/08 OR H04W4/12 OR H04W4/21 OR H04W4/90 OR H04W52/02 OR H04W52/0216 OR H04W52/0235 OR H04W52/325 OR H04W52/34 OR H04W52/346 OR H04W52/367 OR H04W52/38 OR H04W52/48 OR H04W52/54 OR H04W56/001 OR H04W56/0015 OR H04W56/004 OR H04W60/00 OR H04W60/06 OR H04W64/00 OR H04W68/005 OR H04W72/0406 OR H04W72/0426 OR H04W72/0486 OR H04W72/06 OR H04W72/08 OR H04W72/121 OR H04W72/1215 OR H04W72/1226 OR H04W72/1231 OR H04W72/1242 OR H04W72/1257 OR H04W74/0816 OR H04W74/0825 OR H04W74/0866 OR H04W76/20 OR H04W76/22 OR H04W76/25 OR H04W76/36 OR H04W76/45 OR H04W80/04 OR H04W84/042 OR H04W88/10 OR H04W88/14 OR H04W88/18 OR H04W8/005 OR	FPRS; EPO; JPO; DERWENT					

		H04W8/04 OR H04W92/10).CPC.)				
S22	7269234	(mobile adj phone OR telephone$1 OR ((mobile OR portable OR wireless OR handheld OR hand adj held OR cell OR cellular OR smart) near10 (device$1 OR computer$1 OR phone$1)) OR blackberr$3 OR pda OR iphone$1 OR ipad$1 OR smartphone$1 OR cellphone$1 OR personal adj digital adj assistant$1)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 15:25
S23	520653	S22 AND ((H04W72/042 OR H04W72/1268 OR H04W76/27 OR H04W72/0446 OR H04W72/0453 OR H04W72/1273 OR H04W74/0808 OR H04W74/0833 OR H04W80/02 OR H04W72/1289 OR H04W76/15 OR H04W88/08 OR H04W48/16 OR H04W4/80 OR H04W72/0413 OR H04W76/10 OR H04W76/11 OR H04W84/12 OR H04W16/14 OR H04W72/1284 OR H04W76/16 OR H04W76/19 OR H04W88/06 OR H04W24/10 OR H04W28/0278 OR H04W72/04 OR H04W72/0493 OR H04W72/082 OR H04W72/085 OR H04W72/1205 OR H04W72/121 OR H04W72/1257 OR H04W76/12 OR H04W76/14 OR H04W76/20 OR H04W76/25 OR H04W76/28 OR H04W84/045 OR H04W88/02 OR H04W88/04 OR H04W16/26 OR H04W28/0236 OR H04W28/0268 OR H04W36/14 OR H04W36/30 OR H04W40/24 OR H04W48/18 OR H04W4/70 OR H04W56/001 OR H04W72/0466 OR H04W72/10 OR H04W72/1231 OR H04W72/1242 OR H04W72/1263 OR H04W72/14 OR H04W74/006 OR H04W74/02 OR H04W74/0866 OR H04W76/30 OR H04W80/10 OR H04W84/18 OR H04W88/023 OR H04W88/10 OR H04W88/16 OR H04W8/02 OR H04W92/10 OR H04W92/20 OR H04W12/04 OR H04W12/0401 OR H04W12/04031 OR H04W16/28 OR H04W24/02 OR H04W24/08 OR H04W28/0252 OR H04W28/0284 OR H04W28/06 OR H04W28/085 OR H04W28/10 OR H04W28/12 OR H04W28/18 OR H04W36/0005 OR H04W36/0069 OR H04W36/0077 OR H04W36/08 OR H04W36/22 OR H04W36/24 OR H04W40/20 OR H04W4/029 OR H04W4/06 OR H04W4/21 OR H04W4/40 OR H04W4/44 OR H04W4/48 OR H04W4/90 OR H04W52/02 OR H04W52/0216 OR H04W52/0229 OR H04W52/0235 OR H04W52/146 OR H04W52/367 OR H04W52/54 OR H04W56/00 OR H04W60/00 OR H04W68/005 OR H04W68/02 OR H04W72/0426 OR H04W72/044 OR	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 15:27

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		H04W72/048 OR H04W72/0486 OR H04W72/12 OR H04W72/1215 OR H04W72/1226 OR H04W74/002 OR H04W74/0816 OR H04W74/0825 OR H04W74/0841 OR H04W76/22 OR H04W76/34 OR H04W76/36 OR H04W76/45 OR H04W80/04 OR H04W80/08 OR H04W88/14 OR H04W8/04 OR H04W8/08 OR H04W8/24 OR H04W92/18).CPC.)				
S24	5026013	(receiv$3 OR collect$3 OR gather$3 OR obtain$3 OR get$1 OR getting OR attain$3 OR acquir$3) near10 (request$3 OR input$3 OR interact$4 OR attempt$1 OR ((ask$3 OR apply$3) adj for) OR demand$3 OR inquir$3 OR petition$2 OR demand$2 OR solict$3 OR enquir$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 15:29
S25	7269234	(mobile adj phone OR telephone$1 OR ((mobile OR portable OR wireless OR handheld OR hand adj held OR cell OR cellular OR smart) near10 (device$1 OR computer$1 OR phone$1)) OR blackberr$3 OR pda OR iphone$1 OR ipad$1 OR smartphone$1 OR cellphone$1 OR personal adj digital adj assistant$1)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 15:37
S26	5026013	(receiv$3 OR collect$3 OR gather$3 OR obtain$3 OR get$1 OR getting OR attain$3 OR acquir$3) near10 (request$3 OR input$3 OR interact$4 OR attempt$1 OR ((ask$3 OR apply$3) adj for) OR demand$3 OR inquir$3 OR petition$2 OR demand$2 OR solict$3 OR enquir$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 15:37
S27	1734579	S25 and S26	US-PGPUB; USPAT	OR	ON	2020/01/20 15:37
S28	134305	(wireless OR cashless OR mobile OR electronic$2 OR virtual$2 OR (electronic adj wallet$1) OR e adj wallet$1) near10 (payment$1 OR money OR monies OR monetary OR fund$3 OR dollar$1 OR currenc$5 OR (electronic$1 adj transfer$3) OR EFT OR (air adj pay$4) OR pay$1 OR paying)	US-PGPUB; USPAT	OR	ON	2020/01/20 15:58
S29	74159	S28 AND ((G06Q20/40145 OR G06Q20/10 OR G06Q20/322 OR G06Q20/34 OR G06Q20/36 OR G06Q20/401 OR G06Q20/4016 OR G06Q50/34 OR G06Q10/087 OR G06Q20/065 OR G06Q20/102 OR G06Q20/20 OR G06Q20/3274 OR G06Q20/4012 OR G06Q20/42 OR G06Q30/0601 OR G06Q10/0833 OR G06Q20/02 OR G06Q20/32 OR G06Q20/3223 OR G06Q20/3276 OR G06Q20/341 OR G06Q20/3678 OR G06Q20/382 OR G06Q20/3825 OR G06Q20/3827 OR G06Q20/385 OR G06Q20/40 OR G06Q20/4014 OR G06Q20/405 OR G06Q20/409 OR	US-PGPUB; USPAT	OR	ON	2020/01/20 15:59

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		G06Q2220/00 OR G06Q30/02 OR G06Q30/0212 OR G06Q30/0261 OR G06Q30/0631 OR G06Q30/0635 OR G06Q30/08 OR G06Q10/06315 OR G06Q10/06375 OR G06Q10/0832 OR G06Q10/08355 OR G06Q10/20 OR G06Q20/027 OR G06Q20/042 OR G06Q20/045 OR G06Q20/0855 OR G06Q20/108 OR G06Q20/1085 OR G06Q20/12 OR G06Q20/14 OR G06Q20/145 OR G06Q20/202 OR G06Q20/204 OR G06Q20/208 OR G06Q20/227 OR G06Q20/3227 OR G06Q20/325 OR G06Q20/327 OR G06Q20/3278 OR G06Q20/352 OR G06Q20/354 OR G06Q20/3572 OR G06Q20/3674 OR G06Q20/381 OR G06Q20/38215 OR G06Q20/3823 OR G06Q20/387 OR G06Q20/388 OR G06Q20/389 OR G06Q20/4037 OR G06Q20/425 OR G06Q30/0202 OR G06Q30/0204 OR G06Q30/0205 OR G06Q30/0214 OR G06Q30/0215 OR G06Q30/0226 OR G06Q30/0238 OR G06Q30/0241 OR G06Q30/0244 OR G06Q30/0246 OR G06Q30/0247 OR G06Q30/0248 OR G06Q30/0253 OR G06Q30/0255 OR G06Q30/0256 OR G06Q30/0267 OR G06Q30/0269 OR G06Q30/0277 OR G06Q30/0282 OR G06Q30/04 OR G06Q30/06 OR G06Q30/0607 OR G06Q30/0625 OR G06Q30/0639 OR G06Q30/0643 OR G06Q40/04 OR G06Q50/01 OR G06Q50/265 OR G07F17/3244 OR G07F17/3258 OR G07F17/3225 OR G07F17/34 OR G07F17/3211 OR G07F17/3213 OR G07F17/3223 OR G07F17/323 OR G07F17/3239 OR G07F17/3255 OR G07F17/326 OR G07F17/3288 OR G07F17/3293 OR G07F17/246 OR G07F17/32 OR G07F17/3204 OR G07F17/3206 OR G07F17/3209 OR G07F17/3218 OR G07F17/322 OR G07F17/3227 OR G07F17/3232 OR G07F17/3237 OR G07F17/3241 OR G07F17/3262 OR G07F17/3267 OR G07F17/3276 OR G07F17/3279 OR G07F17/329 OR G07F17/42 OR G07F19/20).CPC.)				
S30	7269234	(mobile adj phone OR telephone$1 OR ((mobile OR portable OR wireless OR handheld OR hand adj held OR cell OR cellular OR smart) near10 (device$1 OR computer$1 OR phone$1)) OR blackberr$3 OR pda OR iphone$1 OR ipad$1 OR smartphone$1 OR cellphone$1 OR personal adj digital adj assistant$1)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 16:01
S31	134305	(wireless OR cashless OR mobile OR electronic$2 OR virtual$2 OR (electronic adj wallet$1) OR e adj wallet$1) near10 (payment$1 OR money OR monies OR monetary OR fund$3 OR dollar$1 OR	US-PGPUB; USPAT	OR	ON	2020/01/20 16:01

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		currenc$5 OR (electronic$1 adj transfer$3) OR EFT OR (air adj pay$4) OR pay$1 OR paying)				
S32	118302	S30 and S31	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 16:01
S33	5026013	(receiv$3 OR collect$3 OR gather$3 OR obtain$3 OR get$1 OR getting OR attain$3 OR acquir$3) near10 (request$3 OR input$3 OR interact$4 OR attempt$1 OR ((ask$3 OR apply$3) adj for) OR demand$3 OR inquir$3 OR petition$2 OR demand$2 OR solict$3 OR enquir$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 16:03
S34	104076	S33 and S31	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 16:03
S35	7269234	(mobile adj phone OR telephone$1 OR ((mobile OR portable OR wireless OR handheld OR hand adj held OR cell OR cellular OR smart) near10 (device$1 OR computer$1 OR phone$1)) OR blackberr$3 OR pda OR iphone$1 OR ipad$1 OR smartphone$1 OR cellphone$1 OR personal adj digital adj assistant$1)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 16:06
S36	134305	(wireless OR cashless OR mobile OR electronic$2 OR virtual$2 OR (electronic adj wallet$1) OR e adj wallet$1) near10 (payment$1 OR money OR monies OR monetary OR fund$3 OR dollar$1 OR currenc$5 OR (electronic$1 adj transfer$3) OR EFT OR (air adj pay$4) OR pay$1 OR paying)	US-PGPUB; USPAT	OR	ON	2020/01/20 16:06
S37	118302	S35 and S36	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 16:06
S38	5026013	(receiv$3 OR collect$3 OR gather$3 OR obtain$3 OR get$1 OR getting OR attain$3 OR acquir$3) near10 (request$3 OR input$3 OR interact$4 OR attempt$1 OR ((ask$3 OR apply$3) adj for) OR demand$3 OR inquir$3 OR petition$2 OR demand$2 OR solict$3 OR enquir$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 16:06
S39	104076	S38 and S36	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 16:06
S40	95881	S37 and S39	US-	OR	ON	2020/01/20

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			PGPUB; USPAT; FPRS; EPO; JPO; DERWENT			16:06
S41	39	("20180181945" "9875473" "20170161706" "20150170131" "20170255933" "20150170132" "9659296" "20150170130" "9256873" "20150227928" "20150170129" "20150170136" "9547859" "20170193508" "20160098711" "20150170145" "20150169312" "10438208" "9134994" "8856045" "20180165908" "20150178702" "20020156727" "20020156704" "20120323670" "7805338" "20100044444" "20150095235" "8915447" "20130018742" "20120267437" "20120323653" "9384480" "20150006386" "20150066760" "8925827" "20130013352" "8275312" "20090070272").pn.	US-PGPUB; USPAT	OR	ON	2020/01/20 16:10
S42	39	S40 and S41	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2020/01/20 16:10
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				Application Number	15/878,352
				Filing Date	January 23, 2018
				First Named Inventor	Paresh K. Patel
				Art Unit	3696
				Examiner Name	Holly, John H.
Sheet	1	of	3	Attorney Docket Number	104402-5035US

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(11) EP 2 061 001 A1

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Benannte Erstreckungsstaaten:
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3000 Bern 25 (CH)

(54) Zahlungsverfahren, Zahlungssystem und dazu geeignete Vorrichtungen

(57) Die Erfindung betrifft ein Zahlungsverfahren zur Bezahlung von Produkten und/oder Dienstleistungen. Ein Point-of-Sale umfasst ein Dienstterminal (2) und ein Benutzer wählt Produkte und/oder Dienstleistungen am Point-of-Sale zum Kauf aus. Es werden Kreditbelegsdaten eines Belegsdatenspeichers (151) eines mobilen Endgeräts (1) des Benutzers über Nahbereichs-Schnittstellen (11,21) an das Dienstterminal (2) übertragen. Auf dem Dienstterminal (2) werden aufgrund der Kreditbelegsdaten und aufgrund der zum Kauf ausgewählten Produkte und/oder Dienstleistungen Abbuchungsdaten erstellt. Die Abbuchungsdaten werden vom Dienstterminal (2) über die Nahbereichs-Schnittstellen (21,11) an das mobile Endgerät (1) übertragen. Aufgrund der Übermittlung der Abbuchungsdaten wird mittels des Dienstterminals (2) ein Signal für die Freigabe der zum Kauf ausgewählten Produkte und/oder Dienstleistungen eingeschaltet.

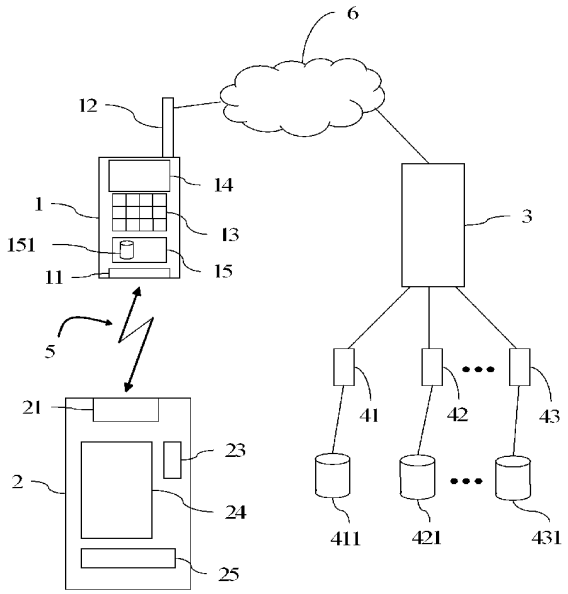


Fig. 1

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Beschreibung

Technisches Gebiet

[0001] Die vorliegende Erfindung bezieht sich auf ein Zahlungsverfahren, auf ein Zahlungssystem und auf dazu geeignete Vorrichtungen. Insbesondere betrifft die vorliegende Erfindung ein Zahlungsverfahren zur Bezahlung von Produkten und/oder Dienstleistungen an einem Point-of-Sale umfassend ein Dienstterminal, wobei ein Benutzer Produkte und/oder Dienstleistungen zum Kauf auswählt, und wobei mittels des Dienstterminals ein Signal zur Freigabe der gekauften Produkte- und/oder Dienstleistungen eingeschaltet wird.

Stand der Technik

[0002] Im Stand der Technik sind Zahlungsverfahren zur Bezahlung von Produkten- und/oder Dienstleistungen welche an einem Point-of-Sale angeboten werden bekannt. Solche Zahlungsverfahren können auf Bargeld, auf Kreditkarten, auf Debitkarten, auf vorbezahlten (prepaid) Karten, auf Gutscheinen usw. basieren. Insbesondere die bargeldlose Bezahlung von Produkten- und/oder Dienstleistungen hat in den vergangenen Jahren immer mehr an Bedeutung gewonnen. So ist es heutzutage möglich, in Supermärkten oder anderen Geschäften die Bezahlung eines Einkaufs mittele einer Kreditkarte oder Debitkarte aufgrund eines elektronischen Zahlungsverfahrens, oder - mit anderen Worten - aufgrund einer elektronischen Transaktion, durchzuführen. Dazu ist am Verkaufspunkt, oder wie dieser häufiger genannt wird am Point-of-Sale, also im Supermarkt, in einem Geschäft oder bei einem Verkaufsautomaten eine Vorrichtung oder ein Dienstterminal angebracht, in welche eine Kreditkarte oder eine Debitkarte eingeführt werden kann und bei welcher ein PIN (PIN: Personal Identification Number) eingegeben werden kann. Aufgrund von auf der Kreditkarte oder der Debitkarte abgespeicherten Daten und aufgrund des PIN wird mittels einer Telekommunikationsverbindung zu einer Zentrale ein elektronisches Zahlungsverfahren durchgeführt und es wird ein Geldwertbetrag vom Konto des Käufers eines Produkts oder einer Dienstleistung auf ein Konto des Anbieters des Produkts oder der Dienstleistung übertragen. Um die Sicherheit eines solchen Zahlungsverfahrens zu gewährleisten, muss bei jeder Transaktion eine Kommunikationsverbindung zwischen dem Dienstterminal und einer Zentrale erstellt werden. In vielen Fällen ist die Erstellung eines entsprechenden Kommunikationsnetzwerks mit beträchtlichen Installationskosten verbunden. Zudem kann die Erstellung einer Kommunikationsverbindung wegen einer Überlastung des Kommunikationsnetzwerks oder anderen technischen Gründen zu einer beträchtlichen Verzögerung des Zahlungsverfahrens führen, sodass beispielsweise in einem Supermarkt ein elektronisches Zahlungsverfahren auch heute noch oft beträchtlich langsamer abgewickelt wird als eine Bezahlung mit Bargeld.

[0003] Im Stand der Technik sind auch Point-of-Sales bekannt, welche einen Verkaufsautomaten umfassen und der Ausgabe oder Auslieferung von Produkten oder Dienstleistungen dienen. Ein Konsument kann an einem Verkaufsautomaten mit Zahlungsmitteln wie Bargeld oder Kreditkarte beispielsweise Produkte wie einen Snack, ein Getränk oder Süssigkeiten beziehen. Der Konsument kann an bestimmten Verkaufsautomaten auch Berechtigungen für den Bezug von Dienstleistungen, wie beispielsweise eine Fahrkarte für die Benutzung eines öffentlichen Verkehrsmittels wie einem Zug oder Bus, eine Parkkarte für das Parkieren eines Fahrzeugs in einer Parkzone oder ein Wertcode für das Aufladen eines Prepaid-Kontos eines Telekommunikationsanbieters, beziehen. Verkaufsautomaten für die Abgabe oder Ausgabe von Produkten oder Dienstleistungen umfassen beispielsweise auch Zeitungsautomaten, Benzinzapfsäulen, Fotoautomaten, Briefmarkenautomaten, Zugangsautomaten bei Toiletteneinrichtungen, Automaten für die Abgabe von Videos oder Computerspielen, öffentliche Telefonsprechzellen oder Spielautomaten in Spielhallen. Verkaufsautomaten können eingerichtet sein, um ein einzelnes Produkt oder eine einzelne Dienstleistung anzubieten, wie dies beispielsweise bei einem Kaffeeautomaten oder bei einem Ticketautomaten in einem Bus der Fall sein kann. Verkaufsautomaten können auch eingerichtet sein, um eine grosse Vielzahl von Produkten und/oder Dienstleistungen anzubieten, wie dies beispielsweise bei einem Automaten für Snacks und Getränke an einem Bahnhof oder bei einem Fahrkartenautomaten an einer Bushaltestelle der Fall sein kann. Verkaufsautomaten sind deshalb so praktisch, weil diese mit einem geringen Personalaufwand betrieben werden können - beispielsweise durch ein regelmässiges Nachfüllen des Automaten mit Produkten - und dem Konsumenten mit einem geringen personellen Überwachungsaufwand während 24 Stunden am Tag zur Verfügung stehen können. Für die Bezahlung der Produkte oder Dienstleistungen sind Verkaufsautomaten mit Mitteln zur Entgegennahme von Bargeld oder anderen Zahlungsmitteln ausgerüstet. So kann ein Getränkeautomat beispielsweise über Mittel zur Entgegennahme von Münzen verfügen, ein Billetautomat kann über Mittel zur Entgegennahme von Münzen oder Geldscheinen verfügen oder eine öffentliche Telefonsprechzelle kann über Mittel zur Entgegennahme einer Telefonkarte verfügen. Beispielsweise bei Billetautomaten oder bei Benzinzapfsäulen ist auch die Bezahlung mit Kreditkarte oder einer Bankkontokarte weit verbreitet. Damit ein Verkaufsautomat für die Bezahlung mit Kreditkarte oder Bankkontokarte vorbereitet ist, muss der Verkaufsautomat allerdings über ein Kommunikationsnetzwerk mit einer Zentrale verbunden werden. Dies hat den Nachteil, dass die Erstellung eines solchen Kommunikationsnetzwerks mit beträchtlichen Installationskosten verbunden sein kann. Um eine verteilte Anordnung von Verkaufsautomaten entsprechend auszurüsten können deshalb sehr hohe Investitionen er-

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forderlich sein.

[0004] In der Patentschrift EP 1 281 137 wird ein Transaktionsverfahren beschrieben, bei welchem ein Kunde kostenpflichtige Produkte an einem Dienstterminal beziehen kann. Über eine kontaktlose Schnittstelle wird vom Dienstterminal ein Selektionsprogramm an ein Mobilgerät des Kunden übermittelt. Der Kunde wählt auf dem Mobilgerät ein Produkt aus, worauf eine Dienstterminalidentifizierung und eine Objektidentifizierung vom Mobilgerät an eine Zentrale übermittelt wird. Auf der Zentrale wird die Kreditwürdigkeit des Kunden geprüft. Über eine Kommunikationsverbindung wird von der Zentrale ein Kreditbeleg und eine Objektidentifizierung an das Dienstterminal übermittelt. Das Dienstterminal gibt das gewählte Produkt aus und übermittelt einen Kostenbetrag an die Zentrale, welche den Kostenbetrag verrechnet. Es ist ein Nachteil dieses Transaktionsverfahrens, dass zwischen dem Dienstterminal und der Zentrale eine Kommunikationsverbindung eingerichtet werden muss.

[0005] In der Patentschrift EP 1 245 010 wird ein Verkaufsautomat beschrieben, wobei eine dedizierte Verbindung zwischen dem Verkaufsautomaten und einem Finanzinstitut nicht vorhanden ist. Ein Server empfängt von einem Mobiltelefon über ein Mobilfunknetz eine Anforderung für den Kauf eines Produkts. Der Server erzeugt einen Verkaufscode und übermittelt den Verkaufscode an das Mobiltelefon. Der Verkaufscode wird vom Mobiltelefon an einen lokalen Empfänger des Verkaufsautomaten gesendet und aufgrund des Verkaufscodes wird eine Einrichtung zur Abgabe des Produkts freigeschaltet. Es ist ein Nachteil dieses Verfahrens, dass für den Kauf eines Produkts zwischen dem Mobiltelefon und einer Zentrale eine Kommunikationsverbindung verfügbar sein muss. Das Einrichten eines entsprechenden Mobilfunknetzes ist jedoch beispielsweise in Parkhäusern oder in Untergeschossen von Gebäuden oft mit einem beträchtlichen Aufwand verbunden.

Darstellung der Erfindung

[0006] Es ist eine Aufgabe der vorliegenden Erfindung, ein neues Zahlungsverfahren, ein neues Zahlungssystem und dazu geeignete Vorrichtungen für die Bezahlung von Produkten und/oder Dienstleistungen vorzuschlagen, welche nicht die Nachteile des Standes der Technik aufweisen. Das neue Zahlungsverfahren, das neue Zahlungssystem und die dazu geeigneten Vorrichtungen sollen insbesondere die rasche Bezahlung von Produkten oder Dienstleistungen mit einem mobilen Endgerät an einem Dienstterminal eines Point-of-Sale ermöglichen, ohne dass zwischen dem Dienstterminal und einer Zentrale ein Kommunikationsnetzwerk eingerichtet werden muss und ohne dass zum Zeitpunkt der Bezahlung von Produkten oder Dienstleistungen zwischen dem mobilen Endgerät und einer Zentrale ein Kommunikationsnetzwerk verfügbar sein muss.

[0007] Gemäss der vorliegenden Erfindung werden diese Ziele insbesondere durch die Elemente der unabhängigen Ansprüche erreicht. Weitere vorteilhafte Ausführungsformen gehen ausserdem aus den abhängigen Ansprüchen und der Beschreibung hervor.

[0008] Insbesondere werden diese Ziele durch die Erfindung dadurch erreicht, dass Kreditbelegsdaten eines Belegsdatenspeichers eines mobilen Endgeräts vom mobilen Endgerät über eine Nahbereichs-Schnittstelle des mobilen Endgeräts an eine Nahbereichs-Schnittstelle des Dienstterminals übertragen werden, dass auf dem Dienstterminal aufgrund der Kreditbelegsdaten und aufgrund der zum Kauf ausgewählten Produkte und/oder Dienstleistungen Abbuchungsdaten erstellt werden, dass die Abbuchungsdaten vom Dienstterminal über die Nahbereichs-Schnittstellen an das mobile Endgerät übertragen werden, und dass aufgrund der Übermittlung der Abbuchungsdaten mittels des Dienstterminals ein Signal für die Freigabe der zum Kauf ausgewählten Produkte und/oder Dienstleistungen eingeschaltet wird. Ein solches Verfahren hat insbesondere den Vorteil, dass das Dienstterminal an kein Kommunikationsnetzwerk angeschlossen werden muss und somit bestehende Dienstterminal eines Point-of-Sale, also z.B. bestehende Verkaufsautomaten, einfach für ein Zahlungsverfahren aufgerüstet werden können. Zudem ist das Zahlungsverfahren relativ sicher, da die Kreditbelegsdaten beispielsweise verschlüsselt im Belegsdatenspeicher des mobilen Endgeräts abgespeichert werden können. Das Zahlungsverfahren hat zudem den Vorteil, dass die Transaktion anonym erfolgen kann und dass der Benutzer des mobilen Endgeräts seine Identität gegenüber dem Dienstterminal des Point-of-Sale oder gegenüber dem Verkaufsautomaten nicht offenlegen muss. Das Verfahren ist ausserdem auch geeignet, um die Bezahlung von Produkten und/oder Dienstleistungen in einem System mit mehreren Anbietern oder Providern von Produkten und/oder Dienstleistungen auszuführen. Das Verfahren kann zudem auch dann durchgeführt werden, wenn die Netzverbindung zu einem Mobilfunknetz am Standort des Dienstterminals des Point-of-Sale oder am Standort des Verkaufsautomaten nicht vorhanden ist oder wenn die Energieversorgung des mobilen Endgeräts zur Erstellung einer Kommunikationsverbindung zu einem Mobilfunknetz entladen oder ausgeschaltet ist. Der Informationsaustausch mit einer Zentrale zu einer weiteren Abrechnung der Abbuchungsdaten, also beispielsweise zur Gutschrift eines Geldwertbetrags an einen Anbieter von Produkten oder Dienstleistungen, kann auf einen späteren Zeitpunkt verlegt werden, bei welchem beispielsweise über ein Mobilfunknetz eine Kommunikationsverbindung zwischen dem mobilen Endgerät und der Zentrale erstellt wird. Die Kreditbelegsdaten können in einer solchen Art aufgebaut sein, dass durch das Dienstterminal aufgrund der Kreditbelegsdaten die Bonität überprüft werden kann und beispielsweise der Kauf von Produkten und/oder Dienstleistungen eingeschränkt oder ganz gesperrt werden kann.

[0009] In einer Ausführungsvariante werden die Kre-

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ditbelegsdaten und/oder die Abbuchungsdaten mindestens teilweise mittels eines auf dem Dienstterminal abgespeicherten elektronischen Schlüssels entschlüsselt und/oder verschlüsselt. Das auf dem mobilen Terminal aufgeladene Guthaben kann verschlüsselt als Image abgespeichert sein. Die Verschlüsselung respektive der Verschlüsselungsalgorithmus kann so gewählt sein, dass es ohne einen Supercomputer mit einer sehr hohen Rechenleistung nicht möglich ist, das Guthaben oder andere im Image verschlüsselt abgespeicherten Daten zu entschlüsseln oder anzugreifen. Das verschlüsselte Image kann nur auf zwei Arten verändert werden. Einerseits kann das Image über die Nahbereichs-Schnittstellen auf das Dienstterminal übertragen werde und dort entschlüsselt werden, wobei beispielsweise ein Geldwertbetrag von einem im Image abgespeicherten Guthaben abgebucht werden kann. Das Image kann danach wieder verschlüsselt und an das mobile Endgerät zurückübertragen werden. Andererseits kann das Image beispielsweise über ein durch das mobile Endgerät zugreifbare Mobilfunknetz an eine Zentrale übermittelt und dort entschlüsselt werden. Auch auf der Zentrale kann das entschlüsselte Image je nach Bedarf modifiziert werden und verschlüsselt wieder an das mobile Endgerät zurückübertragen werden. Ein solches Verfahren hat insbesondere den Vorteil, dass der Zugriff durch das mobile Endgerät auf die Kreditbelegsdaten gesperrt ist und somit eine Manipulation der Kreditbelegsdaten auf dem mobilen Endgerät verhindert werden kann. Dabei können die Kreditbelegsdaten zwischen dem mobilen Endgerät und einem Anbieter von Kreditbelegsdaten, z.B. für eine Nachladung von Kreditbelegsdaten, beispielsweise blockweise übertragen werden. Auch die Übertragung von Kreditbelegsdaten zwischen dem mobilen Endgerät und dem Dienstterminal des Point-of-Sale kann blockweise erfolgen, beispielsweise über eine Nahbereichsschnittstelle gemäss dem RFID Standard ISO 14443 Level 3.

[0010] In einer anderen Ausführungsvariante werden Kreditbelegsdaten umfassend eine Kontoinformation eines Geldkontos und/oder umfassend einen Geldbetragswert eines Guthabenkontos verwendet. Ein solches Verfahren hat insbesondere den Vorteil, dass je nach Bedarf ein Prepaid Verfahren oder ein Postpaid Verfahren angewendet werden kann. Wie erwähnt kann insbesondere mit einem Prepaid Verfahren ein vollkommen anonymes Zahlungsverfahren durchgeführt werden.

[0011] In einer weiteren Ausführungsvariante werden Abbuchungsdaten umfassend zumindest Teile der Kreditbelegsdaten verwendet. So können die verschlüsselten Kreditbelegsdaten beispielsweise ein Guthabenkonto umfassen. Auf dem Dienstterminal können die verschlüsselten Kreditbelegsdaten entschlüsselt werden und es kann ein Geldwertbetrag vom Guthabenkonto abgebucht werden. Die entschlüsselten Kreditbelegsdaten mit dem abgebuchten Guthabenkonto können anschliessend wieder verschlüsselt werden und den Abbuchungsdaten angehängt werden. Sobald die Abbuchungsdaten mit den erneut verschlüsselten Kreditbelegsdaten auf das mobile Endgerät übertragen werden, können die erneut verschlüsselten Kreditbelegsdaten im Belegsdatenspeicher abgespeichert werden und es können gegebenenfalls bestehende Kreditbelegsdaten durch die erneut verschlüsselten Kreditbelegsdaten ersetzt werden. Ein solches Verfahren hat insbesondere den Vorteil, dass das das Zahlungsverfahren relativ sicher als Prepaid Verfahren ausgestaltet werden kann.

[0012] In einer weiteren Ausführungsvariante werden Abbuchungsdaten umfassend eine Anbieteridentifikation verwendet, wobei zumindest Teile der Abbuchungsdaten vom mobilen Endgerät bei einer Verfügbarkeit eines Kommunikationsnetzwerks an eine Zentrale übermittelt werden, und wobei mittels der Zentrale aufgrund der mindestens Teile der Abbuchungsdaten ein Geldbetragswert einem Konto des der Anbieteridentifikation entsprechenden Produkt- und/oder Dienstanbieters gutgeschrieben wird. Die Anbieteridentifikation kann beispielsweise eine Identifikation des Dienstterminals und/oder eine Identifikation von Produkten oder Dienstleistungen umfassen. Ein solches Verfahren hat insbesondere den Vorteil, dass den an Dienstterminals getätigten Käufen entsprechende Geldwerte an verschiedene Anbieter gutgeschrieben werden können. Zudem kann die Gutschrift von Geldwerten zu einem Zeitpunkt ausgelöst werden, bei dem die Verfügbarkeit eines Kommunikationsnetzwerks wie z.B. eines Mobilfunknetzwerks zwischen dem mobilen Endgerät und der Zentrale besonders gut gewährleistet ist, beispielsweise in Bezug auf die Stabilität der Verbindung zwischen dem mobilen Endgerät und dem Mobilfunknetzwerk oder beispielsweise in Bezug auf die Auslastung des Mobilfunknetzwerks.

[0013] In einer anderen Ausführungsvariante werden Abbuchungsdaten umfassend eine Produkt- und/oder Dienstleistungsidentifikation, eine Zeitangabe, eine Transaktionsidentifikation und/oder eine Kreditbelegsdatenidentifikation verwendet. Selbstverständlich können zusätzliche Daten in Bezug auf den Kauf eines Produkts oder einer Dienstleistung mit den Abbuchungsdaten übermittelt werden. Ein solches Verfahren hat insbesondere den Vorteil, dass in der Zentrale ein Logbuch oder ein Trackingsystem für die Auswertung von Käufen von Produkten und/oder Dienstleistungen geführt werden kann. So kann beispielsweise der Bestand von Produkten eines Verkaufsautomaten überwacht werden und somit die Lagerbewirtschaftung von Produkten optimiert werden, indem beispielsweise ein Servicetechniker genau mit den benötigten Produkten und genau zu dem benötigten Zeitpunkt zur Nachfüllung von Produkten des Verkaufsautomaten aufgeboten werden kann.

[0014] In einer weiteren Ausführungsvariante werden aufgrund der Übermittlung der Abbuchungsdaten zusätzliche, zumindest teilweise unverschlüsselte Informationsdaten vom Dienstterminal an das mobile Endgerät übermittelt. Solche Informationsdaten können beispielsweise einen aktuellen Kontostand eines Prepaid Kontos umfassen. Die Übermittlung der Informationsdaten kann

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beispielsweise gemäss dem RFID Standard ISO 14443 Level 4 erfolgen. Ein solches Verfahren hat insbesondere den Vorteil, dass dem Benutzer des mobilen Endgeräts Informationen in Bezug auf den getätigten Kauf oder Statusmeldungen des Dienstterminals direkt angezeigt werden können.

[0015] In einer weiteren Ausführungsvariante wird ein elektronischer Katalog mit verfügbaren Produkten und/oder Dienstleistungen über die Nahbereichs-Schnittstelle vom Dienstterminal an das mobile Endgerät übermittelt. Ein solches Verfahren hat insbesondere den Vorteil, dass der Benutzer des mobilen Endgeräts die Selektion eines Produkts und/oder einer Dienstleistung sehr bequem mittels des mobilen Endgeräts durchführen kann.

[0016] In einer anderen Ausführungsvariante werden Inhaberdaten betreffend des Inhabers des mobilen Endgeräts und/oder eine Identifikation des mobilen Endgeräts vom mobilen Endgerät über die Nahbereichs-Schnittstellen an das Dienstterminal übermittelt. Ein solches Verfahren hat insbesondere den Vorteil, dass Informationen über den Benutzer, welcher Produkte und/oder Dienstleistungen kaufen möchte, überprüft werden können. So kann beispielsweise der Kauf von Zigaretten oder Alkohol für Personen, welche ein bestimmtes Alter noch nicht erreicht haben, gesperrt werden. Oder es kann an einem Fahrkartenautomaten für Jugendliche automatisch ein entsprechender Jugendtarif verwendet werden.

[0017] In einer anderen Ausführungsvariante wird als Nahbereichs-Schnittstelle eine NFC (Near Field Communication) Schnittstelle, eine RFID (Radio Frequency Identification) Schnittstelle, eine Bluetooth Schnittstelle und/oder eine IrDA (Infrared Data Association) Schnittstelle verwendet. Ein solches Verfahren hat insbesondere den Vorteil, dass bekannte, robuste und weit verbreitete Technologien für die Erstellung einer Nahbereichs-Schnittstelle verwendet werden können.

[0018] In einer anderen Ausführungsvariante werden zumindest Teile der Kreditbelegsdaten und/oder zumindest Teile der Abbuchungsdaten einer Identifikation des mobilen Endgeräts (1) zugeordnet in einem Speichermodul des Verkaufsautomaten (2) abgespeichert. Ein solches Verfahren hat insbesondere den Vorteil, dass die Auslieferung von Produkten und/oder Dienstleistungen protokolliert werden kann, um beispielsweise zu einem späteren Zeitpunkt die von der Zentrale durchgeführten Gutschriften zu Gunsten eines Anbieters zu überprüfen.

Kurze Beschreibung der Zeichnungen

[0019] Nachfolgend werden Ausführungsvarianten der vorliegenden Erfindung anhand von Beispielen beschrieben. Die Beispiele der Ausführungen werden durch folgende beigelegten Figuren illustriert:

Figur 1 zeigt ein schematisches Blockdiagram eines erfindungsgemässen Zahlungssystems für die Bezahlung von Produkten und/oder Dienstleistungen.

Figur 2 zeigt ein Flussdiagram eines Zahlungsverfahrens für die Bezahlung von Produkten und/oder Dienstleistungen.

Wege zur Ausführung der Erfindung

[0020] In Figur 1 bezieht sich das Bezugszeichen 1 auf ein mobiles Endgerät. Beim mobilen Endgerät 1 kann es sich zum Beispiel um ein Mobilfunktelefon, um einen Personal Digital Assistant (PDA), um einen Notebook Computer, um einen MP3-Player wie z.B. einen iPod mit einer WiFi-Schnittstelle oder um irgendein anderes mobiles, persönliches Endgerät handeln. Das mobile Endgerät 1 umfasst Mobilfunkmittel zur Kommunikation über ein Mobilfunknetz oder über ein WiFi-Netz. In Figur 1 sind diese Mobilfunkmittel mit dem Bezugszeichen 12 schematisch als Antenne dargestellt. Die Mobilfunkmittel 12 umfassen alle erforderlichen Hardware- und Softwaremodule, damit mit dem mobilen Endgerät 1 über ein Mobilfunknetz eine Kommunikationsverbindung aufgebaut werden kann. Solche Hardware- und Softwaremodule umfassen insbesondere Antennen, Modulatoren, Kodiermittel sowie Prozessoren um Datenübertragungsprotokolle zu steuern. Die Mobilfunkmittel 12 sind im Stand der Technik bekannt. Die Mobilfunkmittel 12 können eingerichtet sein, um beispielsweise über ein GSM Mobilfunknetz (GSM: Global System for Mobile Communications), über ein UMTS Mobilfunknetz (UMTS: Universal Mobile Telecommunications System), über ein satellitenbasiertes Mobilfunknetz oder über irgendein anderes Mobilfunknetz eine Kommunikationsverbindung für die Übertragung von elektronischen Daten zu erstellen. Anstelle der Mobilfunkmittel 12 oder zusätzlich zu den Mobilfunkmittel 12 kann das mobile Endgerät 1 irgendeine andere Schnittstelle, beispielsweise eine Ethernet-Schnittstelle oder eine USB Schnittstelle (USB: Universal Serial Bus), zur Erstellung einer Kommunikationsverbindung über ein Kommunikationsnetzwerk umfassen.

[0021] In Figur 1 bezieht sich das Bezugszeichen 11 auf eine Nahbereichs-Schnittstelle. Bei der Nahbereichs-Schnittstelle 11 kann es sich um eine NFC Schnittstelle (NFC: Near Field Communication), um eine RFID Schnittstelle (RFID: Radio Frequency Identification), um eine Bluetooth Schnittstelle, um eine IrDA Schnittstelle (IrDA Infrared Data Association) oder um irgendeine andere Nahbereichs-Schnittstelle handeln. Über die Nahbereichs-Schnittstelle 11 kann eine Nahbereichs-Kommunikationsverbindung zu einer entsprechenden Nahbereichs-Schnittstelle aufgebaut werden. Über eine solche Nahbereichs-Kommunikationsverbindung können elektronische Daten übertragen werden.

[0022] In einer Ausführungsvariante können für die Mobilfunkmittel 12 und die Nahbereichs-Schnittstelle 11 Schnittstellen von derselben Technologie verwendet werden, beispielsweise WiFi-Schnittstellen oder irgendwelche andere Schnittstellen welche dazu geeignet sind, sowohl als Mobilfunkmittel 12 als auch als Nahbereichs-

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Schnittstelle 11 verwendet zu werden.

[0023] In Figur 1 bezieht sich das Bezugszeichen 13 auf Eingabemittel des mobilen Endgeräts und das Bezugszeichen 14 auf Anzeigemittel des mobilen Endgeräts. Beispielsweise können die Eingabemittel 13 die Tasten eines Mobilfunktelefons, die Tastatur eines Notebook Computers wird irgendwelche andere Eingabemittel sein. Zum Beispiel können die Anzeigemittel 14 den Display eines Mobilfunktelefons, der Bildschirm eines Notebook Computers oder irgendein anderes Anzeigemittel sein.

[0024] In Figur 1 bezieht sich das Bezugszeichen 15 auf Elektronikmittel, welche für das nachfolgend dargestellte Zahlungsverfahren und Zahlungssystem verwendet werden. Die Elektronikmittel 15 können verschiedene Hardware- und Softwaremodule umfassen. So können die Elektronikmittel 15 insbesondere umfassen: einen oder mehrere Prozessoren für die Abarbeitung eines Softwareprogramms, Speichermittel für die Abspeicherung von Betriebssystemsoftware sowie Applikationssoftware und Identifikationsmittel für die Identifikation eines Benutzers gegenüber dem mobilen Endgerät und für die Identifikation des mobilen Endgeräts gegenüber einem Mobilfunknetz. Die Elektronikmittel 15 können vom Benutzer entfernbare Mittel - wie beispielsweise eine SIM Karten (SIM: Subscriber Identification Modul) oder eine Speicherkarte - oder Mittel welche mit dem mobilen Endgerät 1 fest verbunden sind, umfassen. Die Elektronikmittel 15 können beispielsweise statt einer entfernbaren SIM Karte fest verdrahtete Identifikationsmittel zur Identifikation des mobilen Endgeräts 1 und/oder zur Identifikation des Benutzers dieses mobilen Endgeräts 1 umfassen. Die Elektronikmittel 15 können insbesondere einen Belegsdatenspeicher 151 zur Abspeicherung von Kreditbelegsdaten umfassen. Die Kreditbelegsdaten können beispielsweise verschlüsselte Datenstrukturen umfassen. Ein Kreditbelegsdatensatz kann beispielsweise als XML Datensatz oder in irgendeiner anderen Weise strukturiert sein. So kann ein Kreditbelegsdatensatz beispielsweise als 512 Byte Datensatz, als 1024 Byte Datensatz oder als Datensatz von irgendeiner anderen Grösse aufgebaut sein. Der Belegsdatenspeicher 151 kann entsprechend eingerichtet sein, um einen oder mehrere Kreditbelegsdatensätze von einer bestimmten Grösse oder von unterschiedlichen Grössen abzuspeichern.

[0025] In Figur 1 bezieht sich das Bezugszeichen 2 auf ein Dienstterminal eines Point-of-Sale, beispielsweise auf einen Verkaufsautomaten zur Abgabe von Snacks oder Getränke oder beispielsweise auf ein Dienstterminal zur Bezahlung von Einkäufen in einem Supermarkt. Das Dienstterminal 2 kann beispielsweise ein Angebotsmodul 24 für die Aufnahme oder für die Präsentation von Produkten und/oder Dienstleistungen umfassen. Das Angebotsmodul 24 kann beispielsweise bei einem Getränkeautomaten Mittel für die Lagerung, Kühlung, Zubereitung oder Erhitzung von Getränken umfassen. Das Angebotsmodul 24 kann bei einem Automaten für die Abgabe von Videos beispielsweise DVD Disks (DVD: Digital Versatile Disc) und/oder Videokassetten umfassen. Das Angebotsmodul 24 kann beispielsweise bei einem Fahrkartenautomaten einen Bildschirm für die menugesteuerte Selektion einer Fahrkarte umfassen. Das Angebotsmodul 24 kann auch nur aus einem einfachen Display zur Anzeige von kurzen Texten oder zur Anzeige von einem Menusystem bestehen. Das Angebotsmodul 24 kann ferner irgendwelche andere Einrichtungen für das Anbieten von Produkten und/oder Dienstleistungen umfassen. In Figur 1 bezieht sich das Bezugszeichen 25 auf ein Ausgabemodul. Das Ausgabemodul 25 kann bei einem Getränkeautomaten Mittel für die Halterung eines Bechers oder für die Ausgabe einer Getränkeflasche umfassen. Das Ausgabemodul 25 kann bei einem Automaten für die Abgabe von Videos Mittel für die von einem Benutzer bequem zugreifbare kurzzeitige Lagerung von DVD Disks oder Videokassetten umfassen. Das Ausgabemodul 25 kann beispielsweise bei einem Fahrkartenautomaten einen Schlitz für die Ausgabe einer Fahrkarte umfassen. Das Ausgabemodul 25 kann bei einer öffentlichen Toilette beispielsweise ein Drehkreuz für einen kontrollierten Zugang umfassen. Das Ausgabemodul 25 kann auch nur aus einem einfachen Display zur Anzeige von kurzen Texten oder zur Anzeige von einem Menusystem bestehen. Für den Fall dass auch das Angebotsmodul 24 aus einem Display besteht, kann dasselbe Display für das Angebotsmodul 24 und das Ausgabemodul 25 verwendet werden. Das Ausgabemodul 25 kann ferner irgendwelche andere Einrichtungen für die Ausgabe von Produkten und/oder Dienstleistungen umfassen.

[0026] In Figur 1 bezieht sich das Bezugszeichen 23 auf ein Selektions- und Bezahlmodul. Das Selektions- und Bezahlmodul 23 kann eine Tastatur umfassen, um Produkte und/oder Dienstleistungen des Verkaufsautomaten auszuwählen. Das Selektions- und Bezahlmodul 23 kann Mittel umfassen, um Münzen oder Geldscheine entgegenzunehmen. Es ist hier bemerkt, dass das erfindungsgemässe Zahlungsverfahren und Zahlungssystem so eingerichtet sein kann, dass auf das üblicherweise an einem Verkaufsautomaten angebrachte Selektions- und Bezahlmodul 23 vollständig verzichtet werden kann. Dies kann insbesondere durch eine später beschriebene Übertragung eines elektronischen Produktkatalogs vom Verkaufsautomaten 2 auf das mobile Endgerät 1 erreicht werden.

[0027] In Figur 1 bezieht sich das Bezugszeichen 21 auf eine Nahbereichs-Schnittstelle. Die Nahbereichs-Schnittstelle 21 ist eingerichtet, um mit der Nahbereichs-Schnittstelle 11 des mobilen Endgeräts eine Nahbereichs-Kommunikationsverbindung aufzubauen, sodass zwischen dem mobilen Endgerät 1 und dem Verkaufsautomaten 2 Daten ausgetauscht werden können.

[0028] In Figur 1 bezieht sich das Bezugszeichen 5 auf die erwähnte Nahbereichs-Kommunikationsverbindung.

[0029] Um das erfindungsgemässe Zahlungsverfahren durchzuführen, umfassen die Elektronikmittel 15 ei-

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nen Belegsdatenspeicher 151. Der Belegsdatenspeicher 151 kann wie erwähnt eingerichtet sein, um Kreditbelegsdaten abzuspeichern. Der Belegsdatenspeicher 151 kann beispielsweise als Datenstruktur eines Softwareprogramms eingerichtet sein. Dazu umfassen die Elektronikmittel 15 zunächst Speichermittel für die Abspeicherung eines Betriebssystems, wie z.B. eines Palm OS, eines Symbian OS oder eines Windows CE, sowie Prozessormittel und Hardwareschnittstellen für eine lauffähige Hardwareumgebung des Betriebssystems. Das Softwareprogramm mit dem erwähnten Belegsdatenspeicher 151 kann als in diesem Betriebssystem lauffähige Applikation ausgebildet sein. Selbstverständlich kann der Belegsdatenspeicher 151 auch als Datenstruktur oder als Programm- oder Datencode irgendeines kommerziell erhältlichen Systems, wie eines Mifare-Systems, eines Legic-Systems oder eines Felica-Systems, auf irgendeinem Speichermittel des mobilen Endgeräts ausgebildet sein, beispielsweise kann der Belegsdatenspeicher 151 auf einer SIM-Karte abgespeichert sein. So kann der Belegsdatenspeicher 151 beispielsweise die 16 Sektoren einer Mifare-Chipkarte umfassen und es können beispielsweise in jeden dieser Sektoren Kreditbelegsdaten abgespeichert werden. Schliesslich kann der Belegsdatenspeicher 151 auch als Datenstruktur auf einem zentralen Server, zum Beispiel in einem HLR (HLR: Home Location Register) eines Mobilfunkanbieters, abgespeichert sein, wobei bei Bedarf mittels der Elektronikmittel 15 und den Mobilfunkmittel 12 auf den im zentralen Server abgespeicherten Belegsdatenspeicher zugegriffen werden kann.

[0030] In Figur 1 bezieht sich das Bezugszeichen 6 auf ein Kommunikationsnetzwerk. Das Kommunikationsnetzwerk 6 kann beispielsweise als Mobilfunknetz, z.B. als GSM Netz, als UMTS Netz, als satellitenbasiertes Mobilfunknetz oder als irgendein anderes Kommunikationsnetzwerk ausgeführt sein. Bei einer entsprechenden Verfügbarkeit am mobilen Endgerät 1 und einem aktuellen Standort des mobilen Endgeräts 1 kann der Zugang auf das Kommunikationsnetzwerk 6 beispielsweise auch über ein WLAN Netzwerk (WLAN: Wireless Local Area Network) erfolgen. Es sei bemerkt, dass es für die Durchführung des erfindungsgemässen Zahlungsverfahrens unwesentlich ist, ob zum Zeitpunkt des Kaufs von Produkten und/oder Dienstleistungen am Standort des Dienstterminals 2 ein Kommunikationsnetzwerk 6 verfügbar ist oder nicht.

[0031] In Figur 2 beziehen sich die Schritte S1, S2, S3, usw. auf ein Beispiel für die Durchführung des erfindungsgemässen Zahlungsverfahrens. Dieses Beispiel schränkt den Schutzumfang der beanspruchten Erfindung allerdings nicht ein, sondern dient nur der Veranschaulichung des erfindungsgemässen Zahlungsverfahrens.

[0032] In Schritt S1 wird der erwähnte Belegsdatenspeicher 151 aufgeladen. Dazu kann beispielsweise mittels der am mobilen Endgerät 1 angebrachten Eingabemittel 13 und Anzeigemittel 14 ein Kreditkartenkonto oder irgendein anderes Konto ausgewählt werden und mittels eines entsprechenden Protokolls zwischen dem Herausgeber des Kontos und dem mobilen Endgerät 1 können Kreditbelegsdaten auf den Belegsdatenspeicher 151 aufgeladen werden. Im Falle eines Prepaid Verfahrens kann dieses Aufladen kann als Inkasso bezeichnet werden und kann als Aufladen eines Prepaid-Kontos betrachtet werden. Im Falle eines Postpaid Verfahrens umfassen die Kreditbelegsdaten alle notwendigen Informationen, wie beispielsweise eine Kontoidentifikation, um einem Konto einen Geldbetragswert zu belasten. Eine solche Kontoidentifikation kann beispielsweise eine Identifikation einer Bank und eine Identifikation eines Kontos dieser Bank umfassen. Die Kreditbelegsdaten können für eine einmalige Verwendung strukturiert sein, beispielsweise durch die Angabe eines einmalig verwendbaren Kontos, oder die Kreditbelegsdaten können für eine mehrmalige Verwendung strukturiert sein, beispielsweise durch die Angabe einer festen Kontonummer. Im Falle eines Prepaid Verfahrens kann beispielsweise bei einem solchen Aufladen des Belegsdatenspeichers 151 ein Geldbetragswert von 100 Schweizerfranken aufgeladen werden. Dieser Geldbetragswert von 100 Schweizerfranken kann beispielsweise als anonymes elektronisches Geld in der Form von signierten 10 Rappen Werten im Belegsdatenspeicher 151 abgespeichert werden. Dieser Geldbetragswert kann aber auch in einem einzelnen Kreditbelegsdatensatz abgespeichert werden. Die Kreditbelegsdaten können beispielsweise signiert sein, wobei aus der Signatur beispielsweise der Herausgeber des elektronischen Geldes oder der Herausgeber eines Kontos identifiziert werden kann. Die Kreditbelegsdaten können verschlüsselt sein, sodass durch das mobile Endgerät 1 die Kreditbelegsdaten nicht gelesen werden können. Das Aufladen des Belegsdatenspeichers 151 kann beispielsweise auch über die Nahbereichs-Schnittstelle 11 des mobilen Endgeräts 1 erfolgen, indem beispielsweise an einem Verkaufsautomaten für elektronisches Geld ein Geldbetrag in Form von Münzen oder Geldscheinen eingeführt wird. Der Verkaufsautomat für elektronisches Geld kann eingerichtet sein um eine dem eingeführten Geldbetrag entsprechende Menge von elektronischem Geld zu erzeugen und über die Nahbereichs-Schnittstellen 21,11 zum Aufladen des Belegsdatenspeichers 151 an das mobile Endgerät 1 zu übertragen. Das Aufladen des Belegsdatenspeichers 151 kann mit einem Authentifizierungsschritt, wie der Eingabe eines PIN (PIN: Personal Identification Number), zusätzlich gesichert werden, sodass beispielsweise nur bei der Angabe eines korrekten PIN die Abspeicherung von Kreditbelegsdaten im Belegsdatenspeicher erfolgen kann.

[0033] Im Schritt S2 wird die Nahbereichs-Schnittstelle 11 des mobilen Endgeräts 1 in den Wirkungsbereich einer Nahbereichs-Schnittstelle 21 eines Dienstterminals 2 gebracht. Sobald die Nahbereichs-Schnittstellen 11,21 gemäss einem Protokoll die gegenseitige Verfügbarkeit überprüft haben, kann beispielsweise eine gegenseitige

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Identifikation des mobilen Endgeräts 1 gegenüber dem Dienstterminal 2 und des Dienstterminals 2 gegenüber dem mobilen Endgerät 1 erfolgen. Eine solche gegenseitige Identifikation kann auf der Übermittlung einer Identifikation des Dienstterminals 2 und auf der Übermittlung einer Identifikation des mobilen Endgeräts 1 basieren. Eine solche Identifikation ist allerdings optional, kann aber für die Sicherheit des erfindungsgemässen Zahlungsverfahrens Vorteile haben. Im Schritt S2 können Kreditbelegsdaten vom mobilen Endgerät 1 an das Dienstterminal 2 übermittelt werden. Die Kreditbelegsdaten können wie erwähnt die Signatur eines Herausgebers von elektronischen Geldwerten sowie weitere Angaben über den auf dem mobilen Endgerät 1 abgespeicherten Belegsdatenspeicher 151 umfassen. Die Kreditbelegsdaten können mittels eines Überprüfungsmoduls des Dienstterminals 2 überprüft werden, sodass beispielsweise durch das Dienstterminal 2 nur Kreditbelegsdaten mit bestimmten Identifikationen eines Kontoherausgebers zugelassen werden. Ein solches Überprüfungsmodul kann insbesondere als Softwaremodul, welches in einer Betriebssystemumgebung des Dienstterminals oder des Verkaufsautomaten 2 als Applikation abarbeitbar ist, ausgeführt sein. Falls die Überprüfung der Kreditbelegsdaten nicht erfolgreich ist, beispielsweise weil eine unbekannte Signatur eines Herausgebers von Kreditbelegsdaten festgestellt wurde, dann kann das Verfahren für die Bezahlung von Produkten und/oder Dienstleistungen durch ein entsprechendes Modul des Dienstterminals oder Verkaufsautomaten 2 abgebrochen werden.

[0034] Im Schritt S3 kann beispielsweise optional ein elektronischer Produktkatalog vom Dienstterminal 2 auf das mobile Endgerät 1 übermittelt werden. Aufgrund des elektronischen Produktkatalogs kann beispielsweise durch eine menugeführte Eingabe ein Produkt und/oder eine Dienstleistung, welche am Point-of-Sale des Dienstterminals oder welche vom Verkaufsautomaten 2 angeboten werden, direkt auf dem mobilen Endgerät 1 selektiert werden. Selbstverständlich kann die Selektion eines Produkts auch direkt am Dienstterminal 2, beispielsweise mittels der Selektionsmittel des Selektions- und Bezahlmoduls 23, erfolgen.

[0035] Im Schritt S4 kann ein Selektionsbeleg betreffend der durch den Benutzer ausgewählten Produkte- und/oder Dienstleistungen erstellt werden. Der Selektionsbeleg kann beispielsweise durch das Dienstterminal 2 oder durch das mobile Endgerät erstellt werden und gegebenenfalls zwischen dem Dienstterminal 2 und dem mobilen Endgerät 1 übermittelt werden. Eine Übermittlung ist insbesondere dann vorteilhaft, falls Produkte- und/oder Dienstleistungen mittels Mittel des Dienstterminals 2 selektiert werden und ein Selektionsbeleg zu einer weiteren Verarbeitung oder Kontrolle vom Dienstterminal 2 auf das mobile Endgerät 1 übermittelt werden soll. Ein solcher Selektionsbeleg kann beispielsweise die Nummer eines Produkts und/oder eine Dienstleistung des Dienstterminals 2 umfassen.

[0036] Im Schritt S5 werden beispielsweise aufgrund des im Schritt S4 erstellten Selektionsbelegs Kreditbelegsdaten vom Belegsdatenspeicher 151 des mobilen Endgeräts auf das Dienstterminal 2 übermittelt. Es können im Schritt S5 beispielsweise aber auch nur auf Grund einer Identifikation des Dienstterminals 2 und ohne eine weitere Überprüfung Kreditbelegsdaten aus dem Belegsdatenspeicher 151 an das Dienstterminal 2 übermittelt werden. Durch das mobile Endgerät 1 kann beispielsweise aufgrund eines in einem elektronischen Produktkatalog abgespeicherten Geldbetragswerts bestimmt werden, welche Kreditbelegsdaten an das Dienstterminal 2 zu übermitteln sind. Es können aber auch durch das Dienstterminal 2 spezifische Anforderungen, beispielsweise bezüglich eines minimalen Geldbetragswerts, bezügliche der Kreditbelegsdaten an das mobile Endgerät 1 übermittelt werden. Ein Geldbetragswert kann beispielsweise mittels einer auf dem Dienstterminal 2 abgespeicherten Tabelle und einer Abfrage dieser Tabelle sowie mittels einer elektronischen Kommunikation zwischen entsprechenden Modulen des mobilen Endgeräts 1 und des Dienstterminals 2 bestimmt werden. Statt einer Übermittlung von Kreditbelegsdaten kann eine Abbuchung des Geldbetragswerts beispielsweise unmittelbar durch eine Markierung von auf dem mobilen Endgerät abgespeicherten Kreditbelegsdaten erfolgen. Die markierten Kreditbelegsdaten können beispielsweise anschliessend zusammen mit einer Identifikation des abgebuchten Geldbetragswertes, einer Identifikation des selektierten Produktes und/oder Dienstleistung, einer Identifikation des mobilen Endgeräts 1, und/oder einer Identifikation des Dienstterminals 2 an das Dienstterminal 2 übermittelt werden.

[0037] Im Schritt S6 werden die übermittelten Kreditbelegsdaten auf dem Dienstterminal 2 überprüft. Zur Überprüfung können die Kreditbelegsdaten beispielsweise mittels eines auf dem Dienstterminal 2 abgespeicherten elektronischen Schlüssels entschlüsselt werden. Die entschlüsselten Kreditbelegsdaten können auf die Angabe eines Postpaid oder eines Prepaid Kontos überprüft werden und es kann eine entsprechende Belastungsinstruktion oder ein entsprechender Abzug eines Geldbetragswertes erstellt werden. Bei einem Prepaid Verfahren können die Kreditbelegsdaten ein Guthaben umfassen, wobei durch das Dienstterminal 2 ein Geldwertbetrag von diesem Guthaben abgebucht wird, Kreditbelegsdaten mit dem abgebuchten Guthaben erstellt, verschlüsselt und an das mobile Endgerät für eine Abspeicherung im Belegsdatenspeicher 151 übermittelt werden. Sowohl bei einem Prepaid Verfahren als auch bei einem Postpaid Verfahren können aufgrund der zum Kauf ausgewählten Produkte und/oder Dienstleistungen Abbuchungsdaten erstellt werden. Die Abbuchungsdaten können beispielsweise eine Identifikation eines Anbieters, einen Geldwertbetrag und eine Identifikation eines Prepaid oder eines Postpaid Kontos umfassen. Die Abbuchungsdaten können vom Dienstterminal 2 auf das mobile Endgerät 1 übertragen werden. Selbstverständ-

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lich können die Abbuchungsdaten zusätzlich die wie erwähnt abgebuchten Kreditbelegsdaten umfassen, wobei die abgebuchten Kreditbelegsdaten im mobilen Endgerät 1 abgespeichert werden können.

[0038] Im Schritt S7 wird mittels des Dienstterminals 2 ein Signal für die Freigabe der zum Kauf ausgewählten Produkte und/oder Dienstleistungen eingeschaltet. Dieses Signal kann beispielsweise die automatische Erzeugung eines frisch zubereiteten Getränks, die Abgabe einer Getränkedose, die Bedruckung einer Fahrkarte, das Freigeben eines Drehkreuzes oder eine Anzeigemeldung auf einem Display des Dienstterminals 2 auslösen. So kann beispielsweise an einer Kasse eines Supermarkts dem Personal des Supermarkts und/oder dem Benutzer des mobilen Endgeräts 1 angezeigt werden, dass die Abbuchung der Zahlung erfolgreich war und damit der Besitz der ausgewählten Produkte und/oder Dienstleistungen auf den Benutzer übergegangen ist.

[0039] Im Schritt S8 werden zumindest Teile der Abbuchungsdaten vom mobilen Endgerät 1 an eine Zentrale 3 übermittelt. Die Übermittlung der Abbuchungsdaten kann beispielsweise über ein Mobilfunknetz 6 erfolgen. Die Übermittlung der Abbuchungsdaten kann zu irgendeinem Zeitpunkt erfolgen, beispielsweise zu einem Zeitpunkt mit hoher Verfügbarkeit und geringer Auslastung des Mobilfunknetzes 6. Eine solche Übermittlung von Abbuchungsdaten kann als die Übermittlung von Clearing-Informationen bezeichnet werden. Mittels eines Auswertungsmoduls der Zentrale 3 können die Abbuchungsdaten ausgewertet werden. Eine solche Auswertung kann insbesondere einen Geldbetragswert umfassen, welcher einem Prepaid Konto belastet wurde oder einen Geldbetragswert und Kontoinformationen umfassen, welcher einem Postpaid Konto zu belasten ist. Aufgrund der Auswertung können Geldbetragswerte den entsprechenden Konten 411,421,431 von Produkt- und/oder Dienstleistungsanbietern 41,42,43 gutgeschrieben werden und/oder es kann eine entsprechende Belastung eines Prepaid- oder eines Postpaid-Kontos durchgeführt werden. Eine solche Gutschrift von Geldwerten kann als Clearing bezeichnet werden.

[0040] Insbesondere für den Fall eines Verkaufsautomaten, welcher nur ein einzelnes Produkt oder eine einzelne Dienstleistung zur Auslieferung anbietet, also z.B. einem Kaffeeautomaten oder dem Zugangsautomaten für eine öffentliche Toilette, sei es erwähnt, dass die erfindungsgemässe Selektion von Produkten und/oder Dienstleistungen des Verkaufsautomaten und die Erstellung eines Selektionsbelegs auch implizit erfolgen kann. So kann der Verkaufsautomat beispielsweise in regelmässigen Intervallen eine Kennung des angebotenen Produkts oder der angebotenen Dienstleistung über die Nahbereichs-Schnittstelle aussenden. Sobald sich ein mobiles Endgerät in den Wirkungsbereich der Nahbereichs-Schnittstelle befindet, kann der Benutzer durch irgendwelche Mittel, beispielsweise durch ein Vibrationszeichen und einer Anzeige auf dem Display, aufgefordert werden, den Bezug des Produkts oder der Dienstleistung zu bestätigen, beispielsweise durch ein Drücken einer Taste des mobilen Endgeräts, wodurch die Abbuchung eines Geldbetragswerts, die Übermittlung des Abbuchungsbelegs und die Auslieferung des Produkts oder der Dienstleistung ausgelöst wird.

[0041] Insbesondere bei der Bezahlung von Dienstleistungen an einem Verkaufsautomaten 2 mit einem Bestand von darin angeordneten Produkten können die an die Zentrale übermittelten Abbuchungsdaten detaillierte Informationen über die gekauften Produkte umfassen. Für eine weitere Kontrolle können die Abbuchungsdaten beispielsweise auch den aktuellen Bestand der im Verkaufsautomaten angeordneten Produkte umfassen. Auf der Zentrale können die Abbuchungsdaten entsprechend ausgewertet werden und/oder an die entsprechenden Anbieter 41,42,43 übermittelt werden. Auf der Zentrale 3 oder auf Systemen der Anbieter 41,42,43 können Datenbanken eingerichtet sein, um eine optimale Bewirtschaftung von einer Infrastruktur von Verkaufsautomaten 2 zu ermöglichen. Solche Datenbanken zur Bewirtschaftung von Verkaufsautomaten 2 können insbesondere Einträge der Standorte der Datenbanken, Einträge der Standorte von Lagerräumen mit den in den Verkaufsautomaten 2 angeordneten Produkten, Einträge mit Standorten und der zeitlichen Verfügbarkeit von Servicetechnikern, Einträge mit einer gewünschten Anzahl von Produkten, welche in den Verkaufsautomaten 2 minimal angeordnet sein sollten und/oder Einträge über die Bezugsfrequenz von in einem Verkaufsautomaten 2 angeordneten Produkten. Die Bezugsfrequenz von in einem Verkaufsautomaten 2 angeordneten Produkten kann sich beispielsweise mit der Jahreszeit ändern oder kann beispielsweise davon abhängen, ob der Verkaufsautomat an einem Bahnhof oder in einem Kino angeordnet ist. Durch eine Auswertung der Datenbanken kann eine optimale Bewirtschaftung derart erzielt werden, dass der Servicetechniker keine unnötigen Wegstrecken fährt, dass der Servicetechniker bei einer Fahrt mit den korrekten Produkten ausgerüstet ist, dass die Gesamtweglänge des Servicetechnikers minimiert wird oder dass der Servicetechniker zu einem Zeitpunkt aufgeboten wird, bei welchem noch genügend Zeit verbleibt, um die Produkte des Verkaufsautomaten nachzufüllen. Selbstverständlich wird es durch eine Auswertung der Datenbanken auch möglich sein, auf besondere Bedürfnisse des Servicetechnikers wie beispielsweise auf flexible Arbeitszeiten, spezifisch Rücksicht zu nehmen. Eine solche Bewirtschaftung von Verkaufsautomaten 2 kann insbesondere zu einer wesentlichen Ersparnis von Aufwand und Kosten führen. Die Übertragung der detaillierten Informationen über die gekauften Produkte und/oder Dienstleistungen kann unabhängig vom Zahlungsverfahren oder auch ohne ein Zahlungsverfahren erfolgen.

Patentansprüche

1. Zahlungsverfahren zur Bezahlung von Produkten

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und/oder Dienstleistungen, wobei ein Point-of-Sale ein Dienstterminal (2) umfasst, und wobei ein Benutzer Produkte und/oder Dienstleistungen am Point-of-Sale zum Kauf auswählt,
dadurch gekennzeichnet,
dass Kreditbelegsdaten eines Belegsdatenspeichers (151) eines mobilen Endgeräts (1) des Benutzers vom mobilen Endgerät (1) über eine Nahbereichs-Schnittstelle (11) des mobilen Endgeräts (1) an eine Nahbereichs-Schnittstelle (21) des Dienstterminals (2) übertragen werden, dass auf dem Dienstterminal (2) aufgrund der Kreditbelegsdaten und aufgrund der zum Kauf ausgewählten Produkte und/oder Dienstleistungen Abbuchungsdaten erstellt werden,
dass die Abbuchungsdaten vom Dienstterminal (2) über die Nahbereichs-Schnittstellen (21,11) an das mobile Endgerät (1) übertragen werden, und
dass aufgrund der Übermittlung der Abbuchungsdaten mittels des Dienstterminals (2) ein Signal für die Freigabe der zum Kauf ausgewählten Produkte und/oder Dienstleistungen eingeschaltet wird.

2. Verfahren nach Anspruch 1, **dadurch gekennzeichnet, dass** die Kreditbelegsdaten und/oder die Abbuchungsdaten mindestens teilweise mittels eines auf dem Dienstterminal (2) abgespeicherten elektronischen Schlüssels entschlüsselt und/oder verschlüsselt werden.

3. Verfahren nach einem der Ansprüche 1 bis 2, **dadurch gekennzeichnet, dass** Kreditbelegsdaten umfassend eine Kontoinformation eines Geldkontos und/oder umfassend einen Geldbetragswert eines Guthabenkontos verwendet werden.

4. Verfahren nach einem der Ansprüche 1 bis 3, **dadurch gekennzeichnet, dass** Abbuchungsdaten umfassend eine Anbieteridentifikation verwendet werden, wobei die Abbuchungsdaten vom mobilen Endgerät (1) bei einer Verfügbarkeit eines Kommunikationsnetzwerks (6) an eine Zentrale (3) übermittelt werden, und wobei mittels der Zentrale (3) aufgrund der Abbuchungsdaten ein Geldbetragswert einem Konto (411,421,431) des der Anbieteridentifikation entsprechenden Anbieters (41,42,43) von Produkten und/oder Dienstleistungen gutgeschrieben wird.

5. Verfahren nach einem der Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** Abbuchungsdaten umfassend eine Produkt- und/oder Dienstleistungsidentifikation, eine Zeitangabe, eine Transaktionsidentifikation und/oder eine Kreditbelegsdatenidentifikation verwendet werden.

6. Verfahren nach einem der Ansprüche 1 bis 5, **dadurch gekennzeichnet, dass** aufgrund der Übermittlung der Abbuchungsdaten zusätzliche, zumindest teilweise unverschlüsselte Informationsdaten vom Dienstterminal (2) an das mobile Endgerät (1) übermittelt werden.

7. Verfahren nach einem der Ansprüche 1 bis 6, **dadurch gekennzeichnet, dass** ein elektronischer Katalog mit verfügbaren Produkten und/oder Dienstleistungen über die Nahbereichs-Schnittstellen (11,21) vom Dienstterminal (2) an das mobile Endgerät (1) übermittelt wird.

8. Verfahren nach einem der Ansprüche 1 bis 7, **dadurch gekennzeichnet, dass** Inhaberdaten betreffend des Inhabers des mobilen Endgeräts (1) und/oder dass eine Identifikation des mobilen Endgeräts (1) vom mobilen Endgerät (1) über die Nahbereichs-Schnittstellen (11,21) an das Dienstterminal (2) übermittelt werden.

9. Verfahren nach einem der Ansprüche 1 bis 8, **dadurch gekennzeichnet, dass** als Nahbereichs-Schnittstelle (11,21) eine NFC (Near Field Communication) Schnittstelle, eine RFID (Radio Frequency Identification) Schnittstelle, eine Bluetooth Schnittstelle und/oder eine IrDA (Infrared Data Association) Schnittstelle verwendet wird.

10. Verfahren nach einem der Ansprüche 1 bis 9, **dadurch gekennzeichnet, dass** zumindest Teile der Kreditbelegsdaten und/oder der Abbuchungsdaten einer Identifikation des mobilen Endgeräts (1) zugeordnet in einem Speichermodul des Verkaufsautomaten (2) abgespeichert werden.

11. Zahlungssystem zur Bezahlung von Produkten und/oder Dienstleistungen, wobei ein Point-of-Sale ein Dienstterminal (2) umfasst, und wobei Produkte und/oder Dienstleistungen am Point-of-Sale durch einen Benutzer auswählbar sind, **dadurch gekennzeichnet,**
dass Kreditbelegsdaten eines Belegsdatenspeichers (151) eines mobilen Endgeräts (1) des Benutzers vom mobilen Endgerät (1) über eine Nahbereichs-Schnittstelle (11) des mobilen Endgeräts (1) an eine Nahbereichs-Schnittstelle (21) des Dienstterminals (2) übertragbar sind, dass auf dem Dienstterminal (2) aufgrund der Kreditbelegsdaten und aufgrund der zum Kauf ausgewählten Produkte und/oder Dienstleistungen Abbuchungsdaten erstellbar sind,
dass die Abbuchungsdaten vom Dienstterminal (2) über die Nahbereichs-Schnittstellen (21,11) an das mobile Endgerät (1) übertragbar sind, und
dass aufgrund der Übermittlung der Abbuchungsdaten mittels des Dienstterminals (2) ein Signal für die Freigabe der zum Kauf ausgewählten Produkte und/oder Dienstleistungen einschaltbar ist.

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12. System nach Anspruch 11, **dadurch gekennzeichnet, dass** die Kreditbelegsdaten und/oder die Abbuchungsdaten mindestens teilweise mittels eines auf dem Dienstterminal (2) abgespeicherten elektronischen Schlüssels entschlüsselbar und/oder verschlüsselbar sind.

13. System nach einem der Ansprüche 11 bis 12, **dadurch gekennzeichnet, dass** Kreditbelegsdaten umfassend eine Kontoinformation eines Geldkontos und/oder umfassend einen Geldbetragswert eines Guthabenkontos verwendbar sind.

14. System nach einem der Ansprüche 11 bis 13, **dadurch gekennzeichnet, dass** Abbuchungsdaten umfassend eine Anbieteridentifikation verwendbar sind, wobei die Abbuchungsdaten vom mobilen Endgerät (1) bei einer Verfügbarkeit eines Kommunikationsnetzwerks (6) an eine Zentrale (3) übermittelbar sind, und wobei mittels der Zentrale (3) aufgrund der Abbuchungsdaten ein Geldbetragswert einem Konto (411,421,431) des der Anbieteridentifikation entsprechenden Anbieters (41,42,43) von Produkten und/oder Dienstleistungen gutschreibbar sind.

15. System nach einem der Ansprüche 11 bis 14, **dadurch gekennzeichnet, dass** Abbuchungsdaten umfassend eine Produkt- und/oder Dienstleistungsidentifikation, eine Zeitangabe, eine Transaktionsidentifikation und/oder eine Kreditbelegsdatenidentifikation verwendbar sind.

16. System nach einem der Ansprüche 11 bis 15, **dadurch gekennzeichnet, dass** aufgrund der Übermittlung der Abbuchungsdaten zusätzliche, zumindest teilweise unverschlüsselte Informationsdaten vom Dienstterminal (2) an das mobile Endgerät (1) übermittelbar sind.

17. System nach einem der Ansprüche 11 bis 16, **dadurch gekennzeichnet, dass** ein elektronischer Katalog mit verfügbaren Produkten und/oder Dienstleistungen über die Nahbereichs-Schnittstellen (11,21) vom Dienstterminal (2) an das mobile Endgerät (1) übermittelbar ist.

18. System nach einem der Ansprüche 11 bis 17, **dadurch gekennzeichnet, dass** Inhaberdaten betreffend des Inhabers des mobilen Endgeräts (1) und/oder dass eine Identifikation des mobilen Endgeräts (1) vom mobilen Endgerät (1) über die Nahbereichs-Schnittstellen (11,21) an das Dienstterminal (2) übermittelbar sind.

19. System nach einem der Ansprüche 11 bis 18, **dadurch gekennzeichnet, dass** als Nahbereichs-Schnittstelle (11,21) eine NFC (Near Field Communication) Schnittstelle, eine RFID (Radio Frequency Identification) Schnittstelle, eine Bluetooth Schnittstelle und/oder eine IrDA (Infrared Data Association) Schnittstelle verwendbar ist.

20. System nach einem der Ansprüche 11 bis 19, **dadurch gekennzeichnet, dass** zumindest Teile der Kreditbelegsdaten und/oder der Abbuchungsdaten einer Identifikation des mobilen Endgeräts (1) zugeordnet in einem Speichermodul des Verkaufsautomaten (2) abspeicherbar sind.

21. Mobiles Endgerät (1) zur Ausführung des Zahlungsverfahrens nach einem der Ansprüche 1 bis 10, **dadurch gekennzeichnet, dass** Kreditbelegsdaten eines Belegsdatenspeichers (151) des mobilen Endgeräts (1) vom mobilen Endgerät (1) über eine Nahbereichs-Schnittstelle (11) des mobilen Endgeräts (1) an eine Nahbereichs-Schnittstelle (21) des Dienstterminals (2) übertragbar sind, dass Abbuchungsdaten des Dienstterminals (2) über die Nahbereichs-Schnittstellen (21,11) vom mobilen Endgerät (1) empfangbar sind.

22. Dienstterminal (2) zur Ausführung des Zahlungsverfahrens nach einem der Ansprüche 1 bis 10, **dadurch gekennzeichnet, dass** Kreditbelegsdaten eines Belegsdatenspeichers (151) eines mobilen Endgeräts (1) vom Dienstterminal (2) empfangbar sind, dass auf dem Dienstterminal (2) aufgrund der Kreditbelegsdaten und aufgrund von zum Kauf ausgewählten Produkte und/oder Dienstleistungen Abbuchungsdaten erstellbar sind, dass die Abbuchungsdaten vom Dienstterminal (2) über die Nahbereichs-Schnittstellen (21,11) an das mobile Endgerät (1) übertragbar sind, und
dass aufgrund der Übertragung der Abbuchungsdaten mittels des Dienstterminals (2) ein Signal für die Freigabe der zum Kauf ausgewählten Produkte und/oder Dienstleistungen einschaltbar ist.

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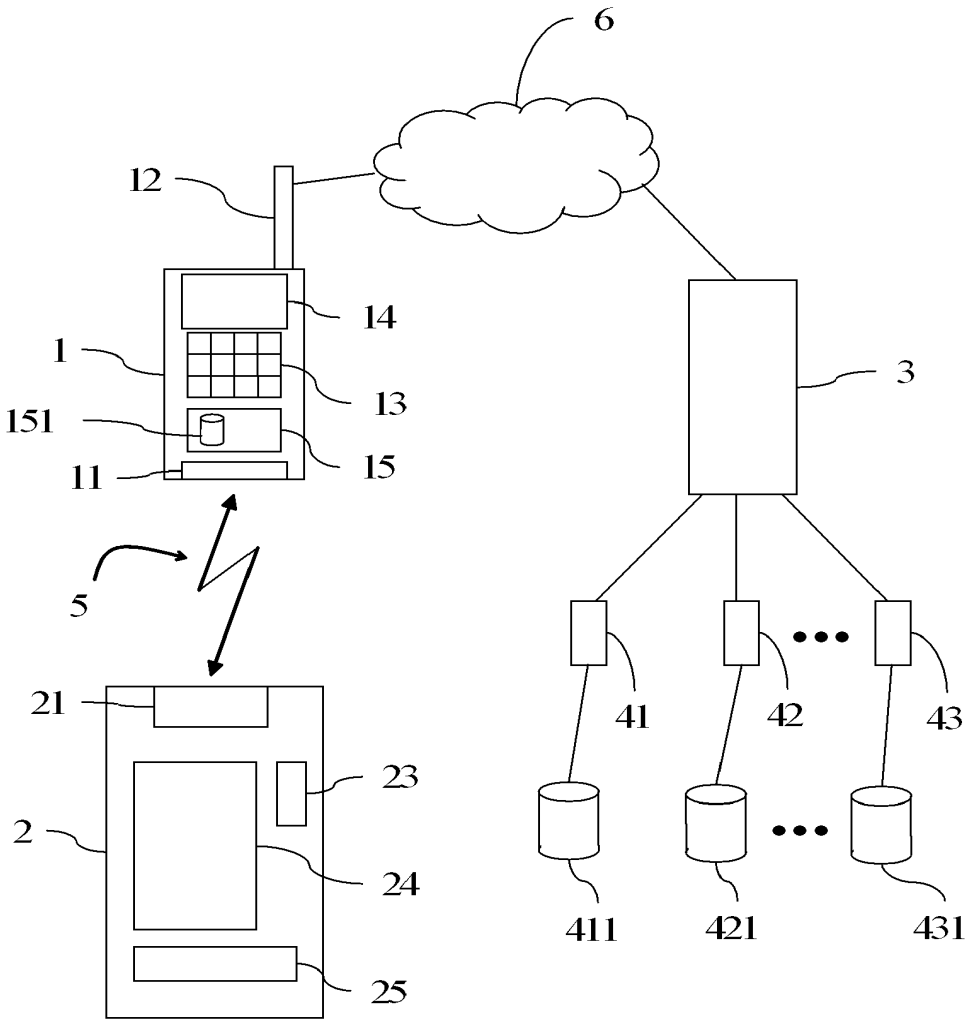


Fig. 1

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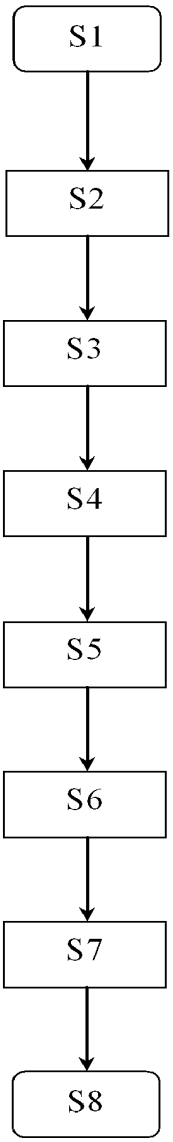


Fig. 2

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Europäisches Patentamt

EUROPÄISCHER RECHERCHENBERICHT

Nummer der Anmeldung
EP 07 12 0462

EINSCHLÄGIGE DOKUMENTE

Kategorie	Kennzeichnung des Dokuments mit Angabe, soweit erforderlich, der maßgeblichen Teile	Betrifft Anspruch	KLASSIFIKATION DER ANMELDUNG (IPC)
X	US 2007/095892 A1 (LYONS ROBERT E [US] ET AL) 3. Mai 2007 (2007-05-03) * Absätze [0022] - [0033]; Abbildung 1 *	1-22	INV. G06Q20/00
X	WO 2006/095212 A (NOKIA CORP [FI]; HUOMO HEIKKI [FI]; IMMONEN OLLI [FI]; LAEHTEENMAEKI M) 14. September 2006 (2006-09-14) * Seite 16, Absatz 3 - Seite 23, Absatz 3; Abbildungen 3,4a,4b *	1-22	
E	WO 2008/002979 A (SOLIDUS NETWORKS INC [US]; BEMMEL VINCENT [US]; MIAN SHAOIB [US]) 3. Januar 2008 (2008-01-03) * Absätze [0005] - [0017], [0064] - [0085]; Abbildung 1 *	1-22	

RECHERCHIERTE SACHGEBIETE (IPC)

G06Q

Der vorliegende Recherchenbericht wurde für alle Patentansprüche erstellt

Recherchenort	Abschlußdatum der Recherche	Prüfer
München	16. April 2008	Beker, Harald

KATEGORIE DER GENANNTEN DOKUMENTE

X : von besonderer Bedeutung allein betrachtet
Y : von besonderer Bedeutung in Verbindung mit einer anderen Veröffentlichung derselben Kategorie
A : technologischer Hintergrund
O : nichtschriftliche Offenbarung
P : Zwischenliteratur

T : der Erfindung zugrunde liegende Theorien oder Grundsätze
E : älteres Patentdokument, das jedoch erst am oder nach dem Anmeldedatum veröffentlicht worden ist
D : in der Anmeldung angeführtes Dokument
L : aus anderen Gründen angeführtes Dokument

& : Mitglied der gleichen Patentfamilie, übereinstimmendes Dokument

3

EPO FORM 1503 03.82 (P04C03)

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ANHANG ZUM EUROPÄISCHEN RECHERCHENBERICHT ÜBER DIE EUROPÄISCHE PATENTANMELDUNG NR.

EP 07 12 0462

In diesem Anhang sind die Mitglieder der Patentfamilien der im obengenannten europäischen Recherchenbericht angeführten Patentdokumente angegeben.
Die Angaben über die Familienmitglieder entsprechen dem Stand der Datei des Europäischen Patentamts am
Diese Angaben dienen nur zur Unterrichtung und erfolgen ohne Gewähr.

16-04-2008

Im Recherchenbericht angeführtes Patentdokument	Datum der Veröffentlichung	Mitglied(er) der Patentfamilie	Datum der Veröffentlichung
US 2007095892 A1	03-05-2007	KEINE	
WO 2006095212 A	14-09-2006	CA 2593657 A1	14-09-2006
		EP 1856903 A1	21-11-2007
WO 2008002979 A	03-01-2008	US 2008046366 A1	21-02-2008

EPO FORM P0461

Für nähere Einzelheiten zu diesem Anhang : siehe Amtsblatt des Europäischen Patentamts, Nr.12/82

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IN DER BESCHREIBUNG AUFGEFÜHRTE DOKUMENTE

Diese Liste der vom Anmelder aufgeführten Dokumente wurde ausschließlich zur Information des Lesers aufgenommen und ist nicht Bestandteil des europäischen Patentdokumentes. Sie wurde mit größter Sorgfalt zusammengestellt; das EPA übernimmt jedoch keinerlei Haftung für etwaige Fehler oder Auslassungen.

In der Beschreibung aufgeführte Patentdokumente

- EP 1281137 A **[0004]**
- EP 1245010 A **[0005]**

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44*bis*)

Applicant's or agent's file reference 104402-5027WO	**FOR FURTHER ACTION**	See item 4 below
International application No. PCT/US2017/018194	International filing date *(day/month/year)* 16 February 2017 (16.02.2017)	Priority date *(day/month/year)* 17 February 2016 (17.02.2016)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant PAYRANGE, INC.		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

   In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☒	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44*bis*.3(c) and 93*bis*.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44*bis* .2).

	Date of issuance of this report 21 August 2018 (21.08.2018)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Authorized officer Kihwan Moon e-mail: pct.team1@wipo.int

Form PCT/IB/373 (January 2004)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2017/018194	16.02.2017	17.02.2016

International Patent Classification (IPC) or both national classification and IPC
INV. G06Q30/06 G07F7/00 G06Q20/16 G06Q20/18 G06Q20/20 G06Q20/32

Applicant
PAYRANGE, INC

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notifed the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA:	Date of completion of this opinion	Authorized Officer
European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Fax: +49 89 2399 - 4465	see form PCT/ISA/210	Gabriel, Christiaan Telephone No. +49 89 2399-0

Form PCT/ISA/237 (Cover Sheet) (January 2015)

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:

   a. ☐ forming part of the international application as filed:

      ☐ in the form of an Annex C/ST.25 text file.

      ☐ on paper or in the form of an image file.

   b. ☐ furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.

   c. ☐ furnished subsequent to the international filing date for the purposes of international search only:

      ☐ in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).

      ☐ on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-21
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-21
Industrial applicability (IA)	Yes:	Claims	1-21
	No:	Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

item V

1 Reference is made to the following documents:

D1 US 2015/170131 A1 (PATEL PARESH K [US]) 18 June 2015 (2015-06-18)

D2 US 2015/235202 A1 (ZABALA JOSE RAFAEL [US]) 20 August 2015 (2015-08-20)

D3 US 8 600 899 B1 (DAVIS PAUL R [US]) 3 December 2013 (2013-12-03)

D4 US 2003/158891 A1 (LEI JONATHAN L [US] ET AL) 21 August 2003 (2003-08-21)

2 The requirements of Article 33(3) PCT are not met, for the following reasons:

2.1 D1 discloses:

"A method of determining electric pulses to provide to an unattended machine based on remotely-configured options for the unattended machine, the method comprising:
at an application executing on a mobile device:
detecting, based on a broadcast received from a pulse-providing device that is coupled with the unattended machine, presence of the unattended machine in proximity to the mobile device (par. 125,126; it follows from par. 85, 211 that the operation of the system in this respect is the same irrespective of whether the adapter module is a pulse providing device or not);
after detecting the presence of the unattended machine, receiving, from a server, ~~information about a first set of remotely-configured options for interacting with the unattended machine;~~
~~in response to receiving the information about the first set of remotely-configured options, displaying, in the application, user interface objects that allow for selection of respective options in the first set of remotely-configured options;~~
~~detecting a selection of a first user interface object that corresponds to a first option in the first set of remotely-configured options;~~
~~after detecting the selection of the first user interface object, receiving, from the server,~~ information that includes an authorization grant ~~for the first option~~ at the unattended machine, wherein the information includes specifications regarding electric pulses to be provided to the unattended machine by the

pulse-providing device ~~in accordance with the first option~~ (1612 in fig. 29a, par. 216; "authorization amount" in par. 126);
in accordance with a determination that a trigger condition has been satisfied, sending the authorization grant and the pulse information to the pulse-providing device ("AuthGrant" in par. 215, fig. 8C; "authorization amount" in par. 126) and
after sending the information that includes the authorization grant and the specifications to the pulse-providing device, receiving an indication, from the pulse-providing device, that the electric pulses were provided to the unattended machine according to the specifications ("1620" in fig. 29B, par. 221).

2.2 D1 does not disclose, after detecting the presence of the unattended machine, and prior to receiving the authorisation grant:

"receiving, from [the] server, information about a first set of remotely-configured options for interacting with the unattended machine;
in response to receiving the information about the first set of remotely-configured options, displaying, in the application, user interface objects that allow for selection of respective options in the first set of remotely-configured options;
detecting a selection of a first user interface object that corresponds to a first option in the first set of remotely-configured options;

2.3 These features make it possible to send different amounts of money to the unattended (vending) machine in one go (see e.g. par. 252 of the present application).

2.4 It is noted that financial/business schemes are as such not technical and they cannot contribute to an inventive step. In the present case, the options to allow a user to select different pricing options and to send money according to the selected option to the vending machine (e.g. in accordance with discount options, as in par. 254) is a non-technical business requirement.

2.5 The technical implementation of this requirement is the use of the server for providing the options to the user at the GUI of the mobile phone, and providing the data required by the pulse-providing device.

2.6 Facing this requirement, it would be immediately evident to a skilled person responsible for finding an implementation, that in the system of D1, the user must select the pricing options at the mobile device. Concerning the location where the pricing options should be configured, there are the options to

perform this in the pulse-providing device, in the mobile device, or in the server. In particular in a situation where flexibility should be offered for providing pricing options, the most straightforward implementation would be to configure all options at the server and provide them to the app at transaction time. Implementing such pricing options in the pulse-providing device would require more complex circuitry which would not be easy to reconfigure. Implementing the pricing options at the mobile phone would e.g. require frequent app updates. Moreover, D1 teaches that such the amount of funds/pulses must be encrypted at the server for security reasons (see par. 88), which also points at using the server for storing and forwarding the pricing options. Document D2 (par. 71, 82, fig. 13) shows a similar system in which discount options are configured at a server and downloaded to a mobile phone app at transaction time. Consequently, the implementation as claimed is obvious, and the subject-matter of claim 1 does not involve an inventive step (Article 33(3) PCT).

2.7 For similar reasons, the subject-matter of the corresponding independent claims 11-13 and 19-21 lacks an inventive step (article 33(3) PCT).

2.8 The further features of dependent claims 2-6 and 14-18 are either business aspects as such (e.g. pricing options), or obvious implementations of business requirements, neither of which can contribute to an inventive step (Article 33(3) PCT).

2.9 The further features of dependent claims 7-10 are known from D1 (see the passages in the search report) and hence cannot contribute to an inventive step (Article 33(3) PCT).

item VII

1 The features of the claims should have been provided with reference signs placed in parenthesis to increase the intelligibility of the claims (Rule 6.2 (b) PCT). This applies to both the preamble and the characterising portion of all claims.

2 In order to indicate more completely the background art useful for understanding the invention, the above-mentioned documents D1-D3 should have been acknowledged in the description (Rule 5.1 (a) (ii) PCT).

3 The vague and imprecise statement in par. 281 imply that the subject-matter for which protection is sought may be different to that defined by the claims,

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44*bis*)

Applicant's or agent's file reference 104402-5015WO	**FOR FURTHER ACTION**	See item 4 below
International application No. PCT/US2016/015763	International filing date *(day/month/year)* 29 January 2016 (29.01.2016)	Priority date *(day/month/year)* 30 January 2015 (30.01.2015)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant PAYRANGE, INC.		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

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☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44*bis*.3(c) and 93*bis*.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44*bis* .2).

	Date of issuance of this report 01 August 2017 (01.08.2017)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Authorized officer Simin Baharlou e-mail: pct.team9@wipo.int

Form PCT/IB/373 (January 2004)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2016/015763	29.01.2016	30.01.2015

International Patent Classification (IPC) or both national classification and IPC
INV. G06Q30/02 G06Q20/18 G06Q30/06

Applicant
PAYRANGE, INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notifed the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA:	Date of completion of this opinion	Authorized Officer
European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Fax: +49 89 2399 - 4465	see form PCT/ISA/210	Moser, Raimund Telephone No. +49 89 2399-0

Form PCT/ISA/237 (Cover Sheet) (January 2015)

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:

   a. ☐ forming part of the international application as filed:

      ☐ in the form of an Annex C/ST.25 text file.

      ☐ on paper or in the form of an image file.

   b. ☐ furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.

   c. ☐ furnished subsequent to the international filing date for the purposes of international search only:

      ☐ in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).

      ☐ on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-12
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-12
Industrial applicability (IA)	Yes:	Claims	1-12
	No:	Claims	

2. Citations and explanations

see separate sheet

Re Item V.

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 Prior art

1.1 Reference is made to the following documents:

D1 US 8 856 045 B1 (PATEL PARESH K [US] ET AL) 7 October 2014 (2014-10-07)

D2 US 2014/136301 A1 (VALDES JUAN [US]) 15 May 2014 (2014-05-15)

2 Overview

2.1 The present invention discloses a method for extending automatic retail machines/vending machines with mobile payment. Hereto, a smartphone acts as a relay between a payment module of a vending machine and a remote server for transaction processing. Furthermore, after purchasing a product a corresponding code can be obtained (e.g., by scanning with the smartphone) and sent to the server for promotion validation.

3 Inventive step, Article 33(3) PCT

3.1 Document D1 is considered to be the closest prior art to the subject-matter of claim 1 and discloses (the references in parentheses applying to this document):

A method, comprising:

at a mobile device including a display, one or more processors, and memory: displaying one or more funds ~~promotional offers~~ on the display (col. 10, ll. 46-51; col. 12, ll. 15-51; Fig. 10C);

detecting a user input selecting a respective fund ~~promotional offer~~ of the one or more funds ~~promotional offers~~ (col. 10, ll. 38-49; col. 23, ll. 17-25; Fig. 10A);

initiating performance of a transaction with an automatic retail machine coupled with a payment module, wherein the transaction corresponds to purchase of a product stocked by the automatic retail machine (col. 23, ll. 17-25);

receiving a transaction completion notification from the payment module, wherein the transaction completion notification indicates that the product ~~corresponding to the selected respective promotional offer~~ was vended by the automatic retail machine (col. 29, ll. 53-60; Fig. 7);

~~in response to receiving the transaction completion notification, providing a prompt to the user of the mobile device to obtain a product code for the vended product to validate the respective promotional offer;~~

~~obtaining the product code for the vended product;~~

~~after obtaining the product code, transmitting the product code to the server; and,~~
~~in response to transmitting the product code:~~

~~receiving promotion validation information from the server; and~~

~~displaying the promotion validation information on the display, wherein the promotion validation information indicates whether the respective promotion offer was validated.~~

The subject-matter of claim 1 differs from that of document D1 in:

(i) displaying promotional offers for selection;

(ii) in response to receiving the transaction completion notification, providing a prompt to the user of the mobile device to obtain a product code for the vended product to validate the respective promotional offer; obtaining the product code for the vended product; after obtaining the product code, transmitting the product code to the server; and, in response to transmitting the product code: receiving promotion validation information from the server; and displaying the promotion validation information on the display, wherein the promotion validation information indicates whether the respective promotion offer was validated.

The above difference relates to a business scheme for providing promotional offers to a user, redeeming said offers after the purchase of a product, and providing promotion validation information to the user.

Such scheme is given to the person skilled in the art as constraint to be met when implementing the present system.

Its implementation clearly requires technical means for providing and displaying promotional offers, acquiring data for determining a purchased product, validating a promotion and providing validation information to the user. However, the person skilled in the art presented with the above business

scheme would implement the necessary technical means, thereby employing standard data processing and programming means as these are generic means that, even in light of the description, perform no more than their well-known purpose.

D2 is cited as an example that said implementation is well-known in the art. It discloses a validation and redemption system for promotional items using mobile devices for scanning merchant tags. In particular, D2 discloses:

(i) displaying promotional offers for selection (par. 59 and 61);

(ii) in response to receiving the transaction completion notification, providing a prompt to the user of the mobile device to obtain a product code for the vended product to validate the respective promotional offer (par. 61); obtaining the product code for the vended product (par. 45, 47, 61); after obtaining the product code, transmitting the product code to the server (par. 61); and, in response to transmitting the product code: receiving promotion validation information from the server (par. 62, 66-67); and displaying the promotion validation information on the display (par. 67), wherein the promotion validation information indicates whether the respective promotion offer was validated (par. 67).

Accordingly, the subject-matter of claim 1 is not inventive (Article 33(3) PCT).

3.2 The same applies *mutatis mutandis* to independent claims 11 and 12 which are also not inventive (Article 33(3) PCT).

3.3 Dependent claims 2-10 do not refer to an allowable claim and do not appear to contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT with respect to inventive step. Said features relate to implementation options which are directly derivable from the underlying business constraints, e.g., the rules for identifying promotional offers, are known from D1 and/or D2 (broadcasting an authorization code/unique identifier, implicit, see D1, Fig. 7, col. 14, ll. 53-65, and col. 28, ll. 55-64; sending an authorization grant token, see D1, col. 28, ll. 52-67; scanning a product code, see D2, par. 45; sending transaction data to the server, see D1, Fig. 7; a mobile device with two transceivers, see D1, col. 3, ll. 46-64), or relate to further refinements of the underlying business scheme (i.e., rules for validating promotional offers, the type of data to be provided to a user).

Accordingly, the subject-matter of claims 2-10 is not inventive (Article 33(3) PCT).

Electronic Acknowledgement Receipt

EFS ID:	38392841
Application Number:	15878352
International Application Number:	
Confirmation Number:	1006
Title of Invention:	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS
First Named Inventor/Applicant Name:	Paresh K. Patel
Customer Number:	24341
Filer:	Douglas James Crisman/Lamesha Robertson
Filer Authorized By:	Douglas James Crisman
Attorney Docket Number:	104402-5035-US
Receipt Date:	24-JAN-2020
Filing Date:	23-JAN-2018
Time Stamp:	14:40:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		104402_5035US_IDS.pdf	538641 87c3efd7d9dedd3197367baf4dbfe7745e9655ff	yes	7

	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Transmittal Letter		1	4	
	Information Disclosure Statement (IDS) Form (SB08)		5	7	
Warnings:					
Information:					
2	Foreign Reference	EP_2061001_20_MAY_2009_Swisscom.pdf	416712 5e7c218234db8645974fdc6ecc1755d258073e26	no	16
Warnings:					
Information:					
3	Non Patent Literature	How-will-Apple-s-new-mobile-wallet-Passbook.pdf	519347 002f01e10dbb5b56f16c26c7178c654fcefe1e5f	no	5
Warnings:					
Information:					
4	Non Patent Literature	Patel_OA_14_320_534_2_MAR_2018.pdf	689468 c9897fe4d7b7ab48fae7d88a86d904e306591275	no	26
Warnings:					
Information:					
5	Non Patent Literature	Patel_FOA_14_321_724_13_DEC_2017.pdf	565380 117cfdfcac3f8f5e9da2e124cf04ec73b0537a1d	no	22
Warnings:					
Information:					
6	Non Patent Literature	Patel_OA_14_641_236_7_FEB_2018.pdf	517766 f2c9132fbff4634fe1dedcdc952eb5c63b2629bb	no	19
Warnings:					
Information:					
7	Non Patent Literature	Patel_OA_15_406_492_25_JUL_2019.pdf	614974 5a55f044a875f2270cb0179e1c6820657caf8841	no	17
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Information:					
8	Non Patent Literature	PATEL_NOA_14_611_065_26_MAR_2018.pdf	705304 90a6a9e5ee174ed6e5f1755538066c7db35ea513	no	18
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Information:					
9	Non Patent Literature	Patel_OA_14_968_703_7_AUG_2018.pdf	1230068 b0bd997198b6ee2b6e47deaf26e0093bf2812a7a	no	31
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Information:					
10	Non Patent Literature	Patel_FOA_14_968_703_12_FEB_2019.pdf	881871 9f14c941929d9de9bf3b8cb9434021be427eaab4	no	24
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Information:					
11	Non Patent Literature	Patel_NOA_14_968_703_27_JUN_2019.pdf	517175 f239985e5dfdb28bed30082c7c09f75ab865343f	no	10
Warnings:					
Information:					
12	Non Patent Literature	Patel_Ex_Parte_Quayle_29_586_758_28_AUG_2018.pdf	457376 e0f42241e2ed927f42c91dbcb02e1ef8fa2377ea	no	10
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Information:					
13	Non Patent Literature	Patel_NOA_29_586_758_21_MAY_2019.pdf	808701 4a92b90966220638270aaa03ef0b658427dbdfb9	no	15
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Information:					
14	Non Patent Literature	Patel_OA_15_603_400_12_JUN_2019.pdf	422123 be527256d87a75d3d4b3dc8f447ef3e0403cdea8	no	11
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Information:					

15	Non Patent Literature	Payrange_94_3_EP_14828617_2_19_DEC_2017.pdf	223386 88fe8b4f3f97700b4a0ab45d8dfbca3e161361e5	no	6
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Information:					
16	Non Patent Literature	Payrange_161_162_EP_16706931_9_21_SEP_2017.pdf	102906 ccfb7a8a43cd99f5fe81d12306b19d828b685a70	no	2
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Information:					
17	Non Patent Literature	Payrange_94_3_EP_16706931_9_29_JUN_2018.pdf	317986 f9437b7c051e17d3a8f9d8706c2a4fc49b67326e	no	8
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Information:					
18	Non Patent Literature	PayRange_Certificateof-Registration-JP2015-023452_08DEC2017.pdf	205372 27b490110bf44f453ffe1c2aedf175b593cb1217	no	1
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Information:					
19	Non Patent Literature	PayRange_Certificate-of-Registration-JP2015-023453_08DEC2017.pdf	205697 a469229b90e85529c48130aa43219bc10d8a9fe8	no	1
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Information:					
20	Non Patent Literature	PayRange_Certificate-of-Registraiton-JP2015-023454_08DEC2017.pdf	213675 e92dc0dbf05cbc41fc412f5af7a961ab8eb00b5e	no	1
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Information:					
21	Non Patent Literature	PayRange_Certificate-of-Registration-JP2015-023455_08DEC2017.pdf	204262 cee05d9f889d257d241b7eeb463ecd2d7d98585c	no	1
Warnings:					
Information:					

22	Non Patent Literature	PayRange_Certificate-of-Registration-JP2015-023456_08DEC2017.pdf	205968 cc2146e31454e3a74f160f7b902f8329603815c6	no	1
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Information:					
23	Non Patent Literature	PayRange_NRR_JP_2017_527886_29_AUG_2019.pdf	164317 6e37ef41a873fb64422c4bb96d436caa44413fc0	no	10
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Information:					
24	Non Patent Literature	PayRange_IPRP_PCT_2017_018194_21_AUG_2018.pdf	282289 c145f089a60058e56580f890e0d647f8bb4dc74a	no	7
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Information:					
25	Non Patent Literature	Payrange_Letters_Patent_MX_F_2015_003172_14_SEP_2017.pdf	243343 9286114bec2ea162d8cca530b9097c660b54ffbd	no	1
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Information:					
26	Non Patent Literature	Payrange_IPRP_PCT_2016_015763_1_AUG_2017.pdf	273313 e6764ca44b4b617e6853f2f9e973c6678183213b	no	7
Warnings:					
Information:					
27	Non Patent Literature	RobocopyES.pdf	456964 e71b2407cc1a7934da011470d46042b3a958e36e	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	11984384		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronically filed January 24, 2020

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:	Paresh Patel	Confirmation No.:	1006
Serial No.:	15/878,352	Art Unit:	3696
Filed:	January 23, 2018	Examiner:	Holly, John H.
For:	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS	Attorney Docket No.:	104402-5035US

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure provisions of 37 C.F.R. §1.56, there is hereby provided certain information which the Examiner may consider material to the examination of the subject U.S. patent application. It is requested that the Examiner make this information of record if it is deemed material to the examination of the application.

1. Enclosures accompanying this Information Disclosure Statement are:

1a. ☒ A list of all patents, publications, applications, or other information submitted for consideration by the office.

1b. A legible copy of:

☒ Each foreign patent;

☒ Each publication or that portion which caused it to be listed on the PTO-1449;

☐ For each cited pending U.S. application, the application specification including the claims, and any drawing of the application, or portion of the application which caused it to be listed on the PTO-1449 including any claims directed to that portion;

☒ all other information or portion which caused it to be listed on the PTO-1449.

1c. ☐ An English language copy of search report(s) from a counterpart foreign application or PCT International Search Report.

1d. ☐ Explanations of relevancy (ATTACHMENT 1(d), hereto) or English language abstracts of the non-English language publications.

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2. ☒ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(b):

☐ Within three months of the filing date of a national application other than a continued prosecution application under §1.53(d);

☐ Within three months of the date of entry of the national stage as set forth in §1.491 in an international application;

☒ Before the mailing of the first Office action on the merits;

☐ Before the mailing of a first Office action after the filing of a request for continued examination under §1.114.

3. ☐ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(c) after the period specified in 37 C.F.R. §1.97(b), but before the mailing date of any of a final action under 37 C.F.R. §1.113, a notice of allowance under 37 C.F.R. §1.311 or an action that otherwise closes prosecution in the application.

(Check either Item 3a, 3b, 3c or 3d)

3a. ☐ The Certification Statement in Item 5 below is applicable. Accordingly, no fee is required.

3b. ☐ The $240 (large entity) fee set forth in 37 C.F.R. §1.17(p) in accordance with 37 C.F.R. §1.97(c) is to be charged to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310 (order no.).

3c. ☐ The $120 (small entity) fee set forth in 37 C.F.R. §1.17(p) in accordance with 37 C.F.R. §1.97(c) is to be charged to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310 (order no.).

3d. ☐ The $60 (micro entity) fee set forth in 37 C.F.R. §1.17(p) in accordance with 37 C.F.R. §1.97(c) is to be charged to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310 (order no.).

(Items 3b or 3c to be checked if any reference known for more than 3 months)

4. ☐ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(d) after the period specified in 37 C.F.R. §1.97(c), but on or before the date of payment of the issue fee.

(Check Item 4a, and 4b, 4c or 4d)

4a. ☐ The Certification Statement in Item 5 below is applicable.

4b. ☐ The $240 (large entity) fee set forth in 37 C.F.R. §1.17(p) in accordance with 37 C.F.R. §1.97(c) is to be charged to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310 (order no.).

4c. ☐ The $120 (small entity) fee set forth in 37 C.F.R. §1.17(p) in accordance with 37 C.F.R. §1.97(c) is to be charged to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310 (order no.).

4d. ☐ The $60 (micro entity) fee set forth in 37 C.F.R. §1.17(p) in accordance with 37 C.F.R. §1.97(c) is to be charged to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310 (order no.).

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5. ☐ Certification Statement (applicable if Item 3a or Item 4a is checked)

(Check either Item 5a, 5b, 5c or 5d)

5a. ☐ In accordance with 37 C.F.R. §1.97(e)(1), it is certified that each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.

5b. ☐ In accordance with 37 C.F.R. §1.97(e)(2), it is certified that no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing of this information disclosure statement.

5c. ☐ Each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart application, and the communication was not **received** by any individual designated in 37 C.F.R. §1.56(c) more than thirty days prior to the filing of this information disclosure statement.

5d. ☐ Pursuant to 37 C.F.R. §1.704(d), each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart application, and the communication was not **received** by any individual designated in 37 C.F.R. §1.56(c) more than thirty days prior to the filing of this information disclosure statement.

6. ☒ Copies of each cited U.S. patent and each U.S. patent application publication are not enclosed pursuant to the USPTO OG Notice dated 05 August 2003 waiving the requirement under 37 C.F.R. 1.98(a)(2)(i) for U.S. patent applications filed after June 30, 2003.

7. ☒ This application is a continuation application under 37 C.F.R. §1.53(b) or (d).

(Check appropriate Items 7a, 7b and/or 7c)

7a. ☐ A Petition to Withdraw from issue under 37 C.F.R. §1.313(b)(5) is concurrently filed herewith.

7b. ☒ Copies of publications listed on Form PTO-1449 from prior application Serial No. 14/458,192, filed on August 12, 2014, 14/456,683, filed on August 11, 2014, 14/335,762, filed on July 18, 2014, 14/214,644, filed on March 14, 2014, and 29/477,025, filed on December 18, 2013, of which this application claims priority under 35 U.S.C. §120, are not being submitted pursuant to 37 C.F.R. §1.98(d).

7c. ☒ Copies of the publications listed on the attached Form PTO-1449 that were not previously cited in prior application Serial No. 14/458,192, filed on August 12, 2014, 14/456,683, filed on August 11, 2014, 14/335,762, filed on July 18, 2014, 14/214,644, filed on March 14, 2014, and 29/477,025, filed on December 18, 2013, are provided herewith.

8. ☐ This is a Supplemental Information Disclosure Statement. (Check Item 8a)

8a. ☐ This Supplemental Information Disclosure Statement under 37 C.F.R. §1.97(f) supplements the Information Disclosure Statement filed on . A bona fide attempt was made to comply with 37 C.F.R. §1.98, but inadvertent omissions were made. These omissions have been corrected herein. Accordingly, additional time is requested so that this Supplemental Information Disclosure Statement can be considered as if properly filed on .

9. ☐ In accordance with 37 C.F.R. §1.98, a concise explanation of what is presently understood to be the relevance of each non-English language publication is:

(Check Item 9a, 9b, or 9c)

9a. ☐ satisfied because all non-English language publications were cited on the enclosed English language copy of the PCT International Search Report or the search report from a counterpart foreign application indicating the degree of relevance found by the foreign office.

9b. ☐ set forth in the application.

9c. ☐ enclosed as an attachment hereto.

10. ☒ The Commissioner is authorized to charge any additional fee required or credit any overpayment for this Information Disclosure Statement and/or Petition to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310 (order no. 104402-5035US).

11. ☒ No admission is made that the information cited in this Statement is, or is considered to be, material to patentability nor a representation that a search has been made (other than a search report of a foreign counterpart application or PCT International Search Report if submitted herewith). 37 C.F.R. §§1.97(g) and (h).

Respectfully submitted,

Date: January 23, 2020

Douglas J. Crisman 39,951 (Reg. No.)
MORGAN, LEWIS & BOCKIUS LLP
1400 Page Mill Road
Palo Alto, CA 94304
(650) 843-4000

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PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/878,352	Filing Date 01/23/2018	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $230 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	07/24/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 4	Minus	*** 4	= 0		x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/SHARON D HARRIS/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronically filed July 24, 2020

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:	Paresh K. Patel	Confirmation No.:	1006
Serial No.:	15/878,352	Art Unit:	3696
Filed:	January 23, 2018	Examiner:	Holly, John H.
For:	*METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS*	Atty. Docket No.:	104402-5035-US

AMENDMENT AND INTERVIEW SUMMARY

Mail Stop: Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The enclosed Amendment is in response to the Office Action dated January 24, 2020 for the above identified patent application.

Petition for Extension of Time under 37 CFR 1.136. It is respectfully requested that the time for responding to the Office Action dated January 24, 2020 be extended for a period of three (3) months from April 24, 2020 to July 24, 2020.

The Commissioner is hereby authorized to charge any required fee(s) to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310 (order no. 104402-5035-US).

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IN THE CLAIMS:

Rewrite the pending claims and add new claims as follows:

1. (Currently Amended) A payment module for an offline payment-operated machine including a coin receiving switch, the payment module comprising:

a short-range wireless transceiver configured to communicate with one or more mobile devices;

one or more processors;

a first interface module configured to output to a control unit of the offline payment-operated machine one or more electrical pulses, each of the one or more electrical pulses emulating an analog signal generated by the coin receiving switch of the offline payment-operated machine in response to insertion of a single coin of a predetermined type in the offline payment-operated machine; and

memory with one or more programs for execution by the one or more processors, the one or more programs including instructions for:

storing, in the memory of the payment module, a number of the electrical pulses that must be received by the control unit to initiate an operation of the offline payment operating machine;

receiving a wireless request via the short-range wireless transceiver from a respective mobile device of the one or more mobile devices to initiate a cashless operation of the offline-payment operated machine; and

in response to the wireless request:

determining a first number of electrical pulses to output via the first interface module to the control unit of the offline payment-operated machine in order to initiate the requested cashless operation of the offline payment-operated machine;

causing the offline payment-operated machine to initiate the requested cashless operation by issuing [[a]] the first number of electrical pulses to the control unit via the first interface module; and

sending operation information corresponding to the initiated operation of the offline payment-operated machine to the respective mobile device via the short-range wireless transceiver.

2. (Original) The payment module of claim 1, wherein the one or more programs further comprise instructions for:

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prior to sending the operation information and after causing the offline payment-operated machine to initiate operation by issuing the first number of electrical pulses to the control unit, obtaining a notification from the offline payment-operated machine indicating initiation of the operation of the offline payment-operated machine; and

in response to receiving the notification:

generating the operation information based at least in part on the notification; and

storing the generated operation information in the memory of the payment module.

3. (Original) The payment module of claim 2, wherein the notification obtained from the offline payment-operated machine includes inventory information.

4. (Original) The payment module of claim 2, further comprising a second interface module configured to store control signals from the control unit of the offline payment-operated machine that initiate operation of the offline payment-operated machine; wherein obtaining the notification from the offline payment-operated machine includes sampling the control signals from the control unit via the second interface module.

5. (Original) The payment module of claim 1, wherein the offline payment-operated machine is not connected to any networks.

6. (Original) The payment module of claim 1, wherein the offline payment-operated machine is a coin-operated laundry machine, a vending machine, or a kiosk.

7. (Currently Amended) A method for accepting electronic payments at an offline payment-operated machine, the method comprising:

at a payment module with one or more processors, memory, a short-range wireless transceiver configured to communicate with one or more mobile devices, a first interface module configured to output to a control unit of the offline payment-operated machine one or more electrical pulses, each of the one or more electrical pulses emulating an analog signal generated by ~~the~~ a coin receiving switch of the offline payment-operated machine in response to insertion of a single coin of a predetermined type in the offline payment-operated machine:

storing, in the memory of the payment module, a number of the electrical pulses that must be received by the control unit to initiate an operation of the offline payment operating machine;

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receiving a wireless request via the short-range wireless transceiver from a respective mobile device of the one or more mobile devices to initiate a cashless operation of the offline-payment operated machine; and

in response to the wireless request:

determining a first number of electrical pulses to output via the first interface module to the control unit of the offline payment-operated machine in order to initiate the requested cashless operation of the offline payment-operated machine;

causing the offline payment-operated machine to initiate the requested cashless operation by issuing [[a]] the first number of electrical pulses to the control unit via the first interface module; and

sending operation information corresponding to the initiated operation of the offline payment-operated machine to the respective mobile device via the short-range wireless transceiver.

8. (Original) The method of claim 7, further comprising:

prior to sending the operation information and after causing the offline payment-operated machine to initiate operation by issuing the first number of electrical pulses to the control unit, obtaining a notification from the offline payment-operated machine indicating initiation of the operation of the offline payment-operated machine; and

in response to receiving the notification:

generating the operation information based at least in part on the notification; and

storing the generated operation information in the memory of the payment module.

9. (Original) The method of claim 8, wherein the notification obtained from the offline payment-operated machine includes inventory information.

10. (Original) The method of claim 8, wherein the payment module includes a second interface module configured to sample control signals from the control unit of the offline payment-operated machine that initiate operation of the offline payment-operated and obtaining the notification from the offline payment-operated machine includes sampling control signals from the control unit via the second interface module.

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11. (Original) The method of claim 7, wherein the offline payment-operated machine is not connected to any networks.

12. (Original) The method of claim 7, wherein the offline payment-operated machine is a coin-operated laundry machine, a vending machine, or a kiosk.

13. (Currently Amended) An offline payment-operated machine, comprising:

a coin receiving switch that generates analog signals in response to insertion of a single coin of a predetermined type in the offline payment-operated machine;

a control unit; and

a payment module that includes:

a short-range wireless transceiver configured to communicate with one or more mobile devices;

one or more processors;

a first interface module configured to output to a control unit of the offline payment-operated machine one or more electrical pulses, each of the one or more electrical pulses emulating an analog signal generated by the coin receiving switch of the offline payment-operated machine in response to insertion of a single coin of a predetermined type in the offline payment-operated machine; and

memory storing one or more programs to be executed by the one or more processors, the one or more programs comprising instructions for:

storing, in the memory of the payment module, a number of the electrical pulses that must be received by the control unit to initiate an operation of the offline payment operating machine;

receiving a wireless request via the short-range wireless transceiver from a respective mobile device of the one or more mobile devices to initiate a cashless operation of the offline-payment operated machine; and

in response to the wireless request:

determining a first number of electrical pulses to output via the first interface module to the control unit of the offline payment-operated machine in order to initiate the requested cashless operation of the offline payment-operated machine;

causing the offline payment-operated machine to initiate the requested cashless operation by issuing [[a]] the first number of electrical pulses to the control unit via the first interface module; and

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sending operation information corresponding to the initiated operation of the offline payment-operated machine to the respective mobile device via the short-range wireless transceiver.

14. (Original) The offline payment-operated machine of claim 13, wherein the one or more programs further comprise instructions for:

prior to sending the operation information and after causing the offline payment-operated machine to initiate operation by issuing the first number of electrical pulses to the control unit, obtaining a notification from the offline payment-operated machine indicating initiation of the operation of the offline payment-operated machine; and

in response to receiving the notification:

generating the operation information based at least in part on the notification; and

storing the generated operation information in the memory of the payment module.

15. (Original) The offline payment-operated machine of claim 14, wherein the notification obtained from the offline payment-operated machine includes inventory information.

16. (Original) The offline payment-operated machine of claim 14, further comprising a second interface module configured to sample control signals from the control unit of the offline payment-operated machine that initiate operation of the offline payment-operated machine; wherein obtaining the notification from the offline payment-operated machine includes sampling the control signals from the control unit via the second interface module.

17. (Original) The offline payment-operated machine of claim 13, wherein the offline payment-operated machine is not connected to any networks.

18. (Original) The offline payment-operated machine of claim 13, wherein the offline payment-operated machine is a coin-operated laundry machine, a vending machine, or a kiosk.

19. (Currently Amended) A payment module for an offline payment-operated machine including a coin receiving switch, the payment module comprising:

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a short-range wireless transceiver configured to communicate with one or more mobile devices;

one or more processors;

a first interface module configured to communicate with a control unit of the offline payment-operated machine using a serial interface to send one or more commands to the control unit;

a second interface module configured to count one or more electrical pulses generated by the coin receiving switch of the offline payment-operated machine in response to the insertion of a single coin of a predetermined type in the offline payment-operated machine and to store an output of the control unit corresponding to an operation of the offline payment-operated machine; and

memory with one or more programs for execution by the one or more processors, the one or more programs including instructions for:

storing, in the memory of the payment module, a number of the electrical pulses that must be received by the control unit to initiate an operation of the offline payment operating machine;

receiving a wireless request via the short-range wireless transceiver from a respective mobile device of the one or more mobile devices to initiate a cashless operation of the offline-payment operated machine; and

in response to the wireless request:

determining a first number of electrical pulses to output via the first interface module to the control unit of the offline payment-operated machine in order to initiate the requested cashless operation of the offline payment-operated machine;

causing the offline payment-operated machine to initiate the requested cashless operation by issuing [[a]] the first command to the control unit via the first interface module; and

sending operation information corresponding to the initiated operation of the offline payment-operated machine to the respective mobile device via the short-range wireless transceiver, the operation information including a value of the requested cashless operation corresponding to a number of coin insertions associated with a total number of the pulses counted by the second interface module to initiate the operation of the offline payment-operated machine.

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20. (Original) The payment module of claim 19, wherein the one or more programs further comprise instructions for:

prior to sending the operation information and after causing the offline payment-operated machine to initiate operation by issuing the first command to the control unit, obtaining a notification from the offline payment-operated machine indicating initiation of the operation of the offline payment-operated machine; and

in response to receiving the notification:

generating the operation information based at least in part on the notification; and

storing the generated operation information in the memory of the payment module.

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REMARKS

This amendment responds to the office action mailed January 24, 2020. In the office action the Examiner:

- rejected claims 1-20 under 35 U.S.C. 101 because the claimed invention is directed to an abstract idea without significantly more; and
- rejected claim 7 on the ground of non-statutory double patenting as being unpatentable over claim 6 of U.S. Patent No. 9,875,473.

After entry of this amendment, the pending claims are: claims 1-20.

AMENDMENTS TO THE CLAIMS

Claims 1, 7, 13, and 19 have been amended.

Support for the amendments can be found in at least paragraphs [0057], [0067], [0109], [0125], [0204], [0205], and in Figures 24A-24C of the application as filed. No new matter has been added.

With respect to all amendments, Applicant has not dedicated or abandoned any unclaimed subject matter. Moreover, Applicant has not acquiesced to any characterizations of the invention, nor any rejections or objections of the claims, made by the Examiner. Moreover, the Applicant hereby rescinds any prior disclaimer of claim scope, to the extent they exist, made during the prosecution of this application or made during the prosecution of any patent or other related patents/applications, and advises the Examiner that any such previous disclaimers and the cited references that they were made to avoid may need to be revisited.

After entry of this amendment, the pending claims are: claims 1-20.

REMARKS CONCERNING REJECTIONS UNDER 35 U.S.C. 101

I. REJECTION OF CLAIMS 1-20 UNDER 35 U.S.C. 101 BECAUSE THE CLAIMED INVENTION IS DIRECTED TO AN ABSTRACT IDEA WITHOUT SIGNIFICANTLY MORE

The claims have been amended to add subject matter that, in combination with the rest of the independent claim elements, was determined in the parent (U.S. Patent No. 9,875,473) to be eligible under 35 U.S.C. 101. The claims as amended are replete with technical details to enable an offline-payment operated machine (e.g., a coin-operated laundry

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machine as recited at para. [0217] of the specification) to be operated in response to a wireless request issued by a mobile device.

The independent claims recite at least the operations of issuing a "first number of electrical pulses," where the number of pulses is determined such that the determined number "emulate[s] an analog signal" and "cause[s] the offline payment-operated machine to initiate the requested cashless operation by issuing the first number of electrical pulses to the control unit," and includes no steps that can be classified as a fundamental economic practice. Therefore, the claims as amended are not abstract and do not recite "Certain Methods of Organizing Human Activity" as previously identified by courts.

Even if the claims were considered directed to an abstract idea, the claims amount to significantly more than the abstract idea itself. The claims recite at least the steps to cause an offline payment-operated machine to receive a wireless request from a mobile device and emulate a signal sequence that would be issued by a coin receiving switch in response to receiving a preset number of coins of a predetermined type. These steps enable alternative ways to use a payment-operated machine by practically applying analog signal emulation in a way that adds wireless communication capabilities to legacy systems, thus **improving the technology of payment-operated machines**.

For at least the reasons above, the independent claims (and therefore the dependent claims as well) are eligible under 35 U.S.C. 101.

REMARKS CONCERNING DOUBLE PATENTING REJECTIONS

II. REJECTION OF CLAIM 7 ON THE GROUND OF NON-STATUTORY DOUBLE PATENTING AS BEING UNPATENTABLE OVER CLAIM 6 OF U.S. PATENT NO. 9,875,473

A terminal disclaimer is being filed concurrently with this response to address this non-statutory double patenting rejection.

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CONCLUDING REMARKS

By responding in the foregoing remarks only to particular positions asserted by the Examiner, the Applicants do not necessarily acquiesce in other positions that have not been explicitly addressed. In addition, the Applicants' arguments for the patentability of a claim should not be understood as implying that no other reasons for the patentability of that claim exist.

In light of the above amendments and remarks, the Applicants respectfully request that the Examiner reconsider this application with a view towards allowance. The Examiner is invited to call the undersigned attorney at (650) 843-4000, if a telephone call could help resolve any remaining items.

Respectfully submitted,

Date: July 24, 2020

/Douglas J. Crisman/ 39,951

Douglas J. Crisman (Reg. No.)
MORGAN, LEWIS & BOCKIUS LLP
1400 Page Mill Road
Palo Alto, CA 94304
(650) 843-4000

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Electronic Patent Application Fee Transmittal

Application Number:	15878352
Filing Date:	23-Jan-2018
Title of Invention:	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS
First Named Inventor/Applicant Name:	Paresh K. Patel
Filer:	Douglas James Crisman/Linda Quintana
Attorney Docket Number:	104402-5035-US

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 3 months with $0 paid	2253	1	700	700
Miscellaneous:				
			Total in USD ($)	**700**

Electronic Acknowledgement Receipt

EFS ID:	40103704
Application Number:	15878352
International Application Number:	
Confirmation Number:	1006
Title of Invention:	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS
First Named Inventor/Applicant Name:	Paresh K. Patel
Customer Number:	24341
Filer:	Douglas James Crisman/Linda Quintana
Filer Authorized By:	Douglas James Crisman
Attorney Docket Number:	104402-5035-US
Receipt Date:	24-JUL-2020
Filing Date:	23-JAN-2018
Time Stamp:	19:29:43
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$700
RAM confirmation Number	E20207NJ30084869
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		104402-5035-US_Amendment_24-JUL-2020.pdf	151139 2f52c1d148c7f6071afba137c9d5473b29f3388b	yes	11

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	8
	Applicant Arguments/Remarks Made in an Amendment	9	11

Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30619 f8e8f63377decad2e5220ff22de5364fbbe3bc8f	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	181758		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc Code: DIST.E.FILE Document Description: Electronic Terminal Disclaimer - Filed	PTO/SB/26 U.S. Patent and Trademark Office Department of Commerce

Electronic Petition Request	**TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT**
Application Number	15878352
Filing Date	23-Jan-2018
First Named Inventor	Paresh Patel
Attorney Docket Number	104402-5035-US
Title of Invention	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS

☒ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action

☒ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.

Owner	Percent Interest
Payrange Inc.	100%

The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)

9875473

as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:
- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

◉ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.

○	I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.

Applicant claims the following fee status:

◉ Small Entity

○ Micro Entity

○ Regular Undiscounted

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

THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

◉ An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application

Registration Number 39951

○ A sole inventor

○ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application

○ A joint inventor; all of whom are signing this request

Signature	/Douglas J. Crisman/
Name	Douglas J. Crisman

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal

Application Number:	15878352
Filing Date:	23-Jan-2018
Title of Invention:	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS
First Named Inventor/Applicant Name:	Paresh K. Patel
Filer:	Douglas James Crisman/Linda Quintana
Attorney Docket Number:	104402-5035-US

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
STATUTORY OR TERMINAL DISCLAIMER	2814	1	160	160
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**160**

Doc Code: DISQ.E.FILE
Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 15878352

Filing Date: 23-Jan-2018

Applicant/Patent under Reexamination: Patel

Electronic Terminal Disclaimer filed on July 24, 2020

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt

EFS ID:	40102949
Application Number:	15878352
International Application Number:	
Confirmation Number:	1006
Title of Invention:	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS
First Named Inventor/Applicant Name:	Paresh K. Patel
Customer Number:	24341
Filer:	Douglas James Crisman/Linda Quintana
Filer Authorized By:	Douglas James Crisman
Attorney Docket Number:	104402-5035-US
Receipt Date:	24-JUL-2020
Filing Date:	23-JAN-2018
Time Stamp:	19:36:16
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$160
RAM confirmation Number	E20207NJ36124918
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer-Filed (Electronic)	eTerminal-Disclaimer.pdf	33382 0fab1a29cf85dd4b1fab5c2ddda8e96f8f2d6e36	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30334 b87360bb58e32203929d0662cf4faf281ab62d63	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	63716		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
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www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

24341 7590 10/23/2020
Morgan, Lewis & Bockius LLP (PA)
1400 Page Mill Road
Palo Alto, CA 94304-1124

EXAMINER
HOLLY, JOHN H

ART UNIT	PAPER NUMBER
3696	

DATE MAILED: 10/23/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/878,352	01/23/2018	Paresh K. Patel	104402-5035-US	1006

TITLE OF INVENTION: METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	01/25/2021

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

CSC ServiceWorks – Ex. 1002
Page 273 of 367

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

24341 7590 10/23/2020
Morgan, Lewis & Bockius LLP (PA)
1400 Page Mill Road
Palo Alto, CA 94304-1124

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/878,352	01/23/2018	Paresh K. Patel	104402-5035-US	1006

TITLE OF INVENTION: METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	01/25/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
HOLLY, JOHN H	3696	705-044000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1_____
2_____
3_____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑Issue Fee ❑Publication Fee (if required) ❑Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

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Page 274 of 367

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/878,352	01/23/2018	Paresh K. Patel	104402-5035-US	1006

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1400 Page Mill Road
Palo Alto, CA 94304-1124

EXAMINER	
HOLLY, JOHN H	

ART UNIT	PAPER NUMBER
3696	

DATE MAILED: 10/23/2020

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 02/11)

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Page 275 of 367

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	**Application No.** 15/878,352	**Applicant(s)** Patel, Paresh K.	
	Examiner JOHN H HOLLY	**Art Unit** 3696	**AIA (FITF) Status** Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to Amendment field July 24, 2020.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-20 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☑ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 01/24/2020.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/John H. Holly/
Primary Examiner, Art Unit 3696

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

DETAILED ACTION

This communication is in response to an Amendments filed July 24, 2020.

Information Disclosure Statement

The Information Disclosure Statement (IDS) submitted on January 24, 2020 was filed in compliance with the provisions of 37 CFR 1.97. Accordingly, this Information Disclosure Statement is being considered by the Examiner.

Allowable Subject Matter

Claims 1– 20 are allowed over prior art of record.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance:
The prior art of record neither anticipates nor renders obvious the claimed subject matter of the instant application as a whole either taken alone or in combination, in particular, prior art of record does not teach storing, in the memory of the payment module, a number of the electrical pluses that must be received by the control unit to initiate an operation of the offline payment operating machine; receiving a wireless request via the short-range wireless transceiver from a respective mobile device of the one or more mobile devices to initiate a cashless operation of the offline-payment operated machine; and in response to the wireless request: determining a first number of electrical pulses to output via the first interface module to the control unit of the offline

payment-operated machine; causing the offline payment-operated machine to initiate the requested cashless operation by issuing the first number of electrical pulses to the control unit via the first interface module; and sending operation information corresponding to the initiated operation of the offline payment-operated machine to the respective mobile device via the short-range wireless transceiver.

The following prior art references have been deemed most relevant to the allowed claim(s):

The closest prior art Philip B. Dixon et al. (Pub. # US 2009/0171682 A1) teaches transaction processing in au offline environment for a prepaid product comprising a portable consumer device includes responding to presentation of the prepaid product at a reader for offline processing by initiating operation of the prepaid product, receiving data from the prepaid product at the reader that indicates the prepaid product is associated with a prepaid account balance, determining that the prepaid product is in a negative balance condition, and taking preventive action in response to the negative balance condition such that future acceptance of the prepaid product at a reader is prevented.

The closest prior art Paul R. Davis (Pat. # US 8,600,899 B1)) teaches vending machine circuitry adapted to interface with vending machine electronics so as to provide data communications between a handheld device, preferably a wireless handheld device operated by a potential consumer, and the vending machine electronics, with the handheld device providing the network communications connectivity for transmitting and receiving information to and from remote data centers, data bases, and/or servers.

The arguments presented by the Applicant along with the combination of elements, such as, the claims recite at least the steps to cause an offline payment-operated machine to receive a wireless request from a mobile device and emulate a signal sequence that would be issued by a coin receiving switch in response to receiving a preset number of coins of a predetermined type. These steps enable alternative ways

to use a payment-operated machine by practically applying analog signal emulation in a way that adds wireless communication capabilities to legacy systems, thus improving the technology of payment-operated machines. The claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks and recite significantly more than an abstract idea.

Conclusion

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John H. Holly whose telephone number is 571.270.3461. The examiner can normally be reached on MON. - FRI 10 AM - 8 PM p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Namrata Boveja can be reached on (571)-272-6702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/John H. Holly/
Primary Examiner, Art Unit 3696

Notice of References Cited	Application/Control No. 15/878,352	Applicant(s)/Patent Under Reexamination Patel, Paresh K.	
	Examiner JOHN H HOLLY	Art Unit 3696	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-7848980-B2	12-2010	Carlson; Mark	G06Q40/00	705/35
*	B	US-20090119190-A1	05-2009	Realini; Carol	G06Q20/04	705/30
*	C	US-20090306818-A1	12-2009	Slagley; David O.	G07F9/002	700/232
*	D	US-20090171682-A1	07-2009	Dixon; Philip B.	G06Q20/3278	705/346
*	E	US-8600899-B1	12-2013	Davis; Paul R.	G06Q20/3278	705/75
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
*	U	NPL Search History
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/878,352	Patel, Paresh K.
	Examiner	Art Unit
	JOHN H HOLLY	3696

CPC - Searched*		
Symbol	**Date**	**Examiner**
G06Q 20/40	01/15/2020	John H. Holly

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
705	44, 1.1, 30, 39, 41	01/15/2020	John H. Holly
705	70, 75, 34, 26, 81	10/19/2020	John H. Holly
455	466, 412, 557, 407	10/19/2020	John H. Holly
700	235, 242	10/19/2020	John H. Holly

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**
EAST, PLUS, IP.COM	01/15/2020	John H. Holly
Updated PE2E SEARCH & IP.COM searches	10/19/2020	John H. Holly
Conducted Forward & Backward citation searches of most pertinent prior art.	10/19/2020	John H. Holly
Text limited search within the following CPC subgroups: G07C 9/00; G06Q 20/32; D06F 37/42; D06F 33/02	10/19/2020	John H. Holly
NPL Search History	10/19/2020	John H. Holly

/John H. Holly/ Primary Examiner, Art Unit 3696	

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/878,352	Patel, Paresh K.
	Examiner	**Art Unit**
	JOHN H HOLLY	3696

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
	Interference Databases	10/19/2020	John H. Holly

/John H. Holly/ Primary Examiner, Art Unit 3696	

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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/878,352	Patel, Paresh K.
	Examiner	**Art Unit**
	JOHN H HOLLY	3696

CPC						
Symbol					**Type**	**Version**
G06Q	/	20	/	327	F	2013-01-01

CPC Combination Sets							
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/John H. Holly/ Primary Examiner, Art Unit 3696	19 October 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	7	18

U.S. Patent and Trademark Office — Part of Paper No.: 20201017

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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/878,352	Patel, Paresh K.
	Examiner	**Art Unit**
	JOHN H HOLLY	3696

INTERNATIONAL CLASSIFICATION					
CLAIMED					
G06Q	/	30	/	00	
NON-CLAIMED					
	/		/		

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
705	44

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					
705	30	39	40	34	70	1.1

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/John H. Holly/ Primary Examiner, Art Unit 3696	19 October 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	7	18

U.S. Patent and Trademark Office — Part of Paper No.: 20201017

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☑ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	10	10	19	19										
2	2	11	11	20	20										
3	3	12	12												
4	4	13	13												
5	5	14	14												
6	6	15	15												
7	7	16	16												
8	8	17	17												
9	9	18	18												

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/John H. Holly/ Primary Examiner, Art Unit 3696	19 October 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	7	18

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Part of Paper No.: 20201017

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	Examiner	**Art Unit**
	JOHN H HOLLY	3696

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☑ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	01/15/2020	10/19/2020							
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT Substitute for Form 1449-PTO				Electronically filed January 24, 2020	
				Application Number	15/878,352
				Filing Date	January 23, 2018
				First Named Inventor	Paresh K. Patel
				Art Unit	3696
				Examiner Name	Holly, John H.
Sheet	1	of	3	Attorney Docket Number	104402-5035US

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				First Named Inventor	Paresh K. Patel
				Art Unit	3696
				Examiner Name	Holly, John H.
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Examiner Initials	Cite No.	Foreign Patent Document Country Code – Number - Kind Code *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
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Examiner Signature	/John H. Holly/	Date Considered	10/19/2020

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				Examiner Name	Holly, John H.
Sheet	3	of	3	Attorney Docket Number	104402-5035US

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DB2/ 22684197.4

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Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	12906	705/44	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/18 10:00 PM
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L14	1	"20170109722"	US-PGPUB; USPAT	OR	ON	ON	2020/01/20 01:06 PM
L15	2379885	(vending OR (parking adj meter$1) OR toll$1 OR laundromat$1 OR game$1 OR (photo adj booth$1) OR dispens$3 OR (payment adj (accept$3 OR operat$3)) OR gaming OR slot$1) near10 (machine$1 OR booth$1 OR unit$1 OR equipment$1 OR device$1 OR apparatus)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 03:01 PM
L16	96654	L15 AND ((H04W72/042 OR H04W72/0446 OR H04W72/0453 OR H04W72/1289 OR H04W76/27 OR H04W24/10 OR H04W72/0413 OR H04W72/1268 OR H04W72/044 OR H04W74/0833 OR H04W76/11 OR H04W24/08 OR H04W36/0085 OR H04W4/40 OR H04W68/02 OR H04W72/082 OR H04W72/1205 OR H04W16/14 OR H04W28/0236 OR H04W28/0278 OR H04W36/08 OR H04W48/16 OR H04W4/021 OR H04W4/023 OR H04W4/029 OR H04W4/70 OR H04W52/146 OR H04W56/001 OR H04W72/1231 OR H04W72/1273 OR H04W72/1284 OR H04W72/14 OR H04W76/28 OR H04W80/08 OR H04W88/06 OR H04W8/18 OR H04W12/06 OR H04W16/18 OR H04W16/28 OR H04W24/02 OR H04W28/021 OR H04W36/0069 OR H04W36/00837 OR H04W36/305 OR H04W40/20 OR	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 03:02 PM

		H04W48/02 OR H04W48/10 OR H04W4/027 OR H04W4/46 OR H04W52/143 OR H04W52/243 OR H04W52/365 OR H04W52/367 OR H04W72/005 OR H04W72/0406 OR H04W72/046 OR H04W72/048 OR H04W72/085 OR H04W72/121 OR H04W72/1242 OR H04W72/1257 OR H04W74/0808 OR H04W76/14 OR H04W76/15 OR H04W76/19 OR H04W84/12 OR H04W88/04 OR H04W88/08 OR H04W8/005 OR H04W8/26 OR H04W92/18 OR H04W12/00512 OR H04W12/04 OR H04W12/0401 OR H04W12/08 OR H04W12/0802 OR H04W16/12 OR H04W16/26 OR H04W24/04 OR H04W28/0205 OR H04W28/0242 OR H04W28/0268 OR H04W28/0284 OR H04W28/0289 OR H04W28/06 OR H04W28/14 OR H04W28/26 OR H04W36/0016 OR H04W36/0033 OR H04W36/0055 OR H04W36/0058 OR H04W36/0061 OR H04W36/0072 OR H04W36/0079 OR H04W36/0088 OR H04W36/04 OR H04W36/14 OR H04W36/22 OR H04W36/30 OR H04W48/06 OR H04W48/18 OR H04W4/02 OR H04W4/08 OR H04W4/21 OR H04W4/24 OR H04W4/44 OR				

		H04W4/80 OR H04W52/0216 OR H04W52/228 OR H04W52/241 OR H04W52/242 OR H04W52/244 OR H04W52/325 OR H04W52/343 OR H04W52/346 OR H04W52/362 OR H04W52/38 OR H04W52/386 OR H04W52/48 OR H04W52/54 OR H04W56/0015 OR H04W56/004 OR H04W64/00 OR H04W64/003 OR H04W64/006 OR H04W68/005 OR H04W72/02 OR H04W72/04 OR H04W72/0473 OR H04W72/0486 OR H04W72/0493 OR H04W72/10 OR H04W72/12 OR H04W72/1215 OR H04W72/1226 OR H04W74/0816 OR H04W74/0825 OR H04W74/0841 OR H04W76/10 OR H04W76/12 OR H04W76/16 OR H04W76/18 OR H04W76/30 OR H04W76/34 OR H04W84/005 OR H04W84/18 OR H04W88/02 OR H04W88/023 OR H04W88/12 OR H04W8/08 OR H04W8/183 OR H04W8/205 OR H04W8/30 OR H04W92/10).CPC.)					
L17	4908180	(nearfield OR wireless$2 OR WiFi OR Wi-Fi OR Bluetooth$1 OR (blue adj tooth$1) OR NFC OR (short adj range) OR short adj wavelength$1 OR BLE OR nearfield OR WAN)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 03:06 PM
L18	634494	L17 AND ((H04W72/042 OR H04W72/0453 OR H04W72/1268 OR	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 03:07 PM

		H04W72/0446 OR H04W76/27 OR H04W72/1273 OR H04W74/0808 OR H04W74/0833 OR H04W76/15 OR H04W80/02 OR H04W4/80 OR H04W72/1289 OR H04W76/11 OR H04W88/08 OR H04W48/16 OR H04W72/0413 OR H04W84/12 OR H04W16/14 OR H04W72/1284 OR H04W76/10 OR H04W76/16 OR H04W76/19 OR H04W88/06 OR H04W24/10 OR H04W72/04 OR H04W72/0493 OR H04W72/082 OR H04W72/085 OR H04W72/1205 OR H04W76/12 OR H04W76/14 OR H04W76/20 OR H04W76/25 OR H04W76/28 OR H04W84/045 OR H04W84/18 OR H04W88/02 OR H04W88/04 OR H04W16/26 OR H04W16/28 OR H04W28/0236 OR H04W28/0268 OR H04W28/0278 OR H04W28/12 OR H04W36/14 OR H04W36/30 OR H04W40/24 OR H04W4/40 OR H04W4/44 OR H04W4/70 OR H04W56/001 OR H04W72/046 OR H04W72/0466 OR H04W72/048 OR H04W72/10 OR H04W72/12 OR H04W72/121 OR H04W72/1231 OR H04W72/1242 OR H04W72/1257 OR H04W72/1263 OR H04W72/14 OR H04W74/006 OR H04W74/02 OR				

		H04W74/0866 OR H04W76/30 OR H04W80/10 OR H04W88/023 OR H04W88/10 OR H04W88/16 OR H04W8/08 OR H04W92/10 OR H04W92/20 OR H04W12/04 OR H04W12/0401 OR H04W12/04031 OR H04W24/08 OR H04W28/00 OR H04W28/021 OR H04W28/0252 OR H04W28/06 OR H04W28/085 OR H04W28/10 OR H04W28/14 OR H04W28/18 OR H04W36/0005 OR H04W36/0069 OR H04W36/0077 OR H04W36/06 OR H04W36/08 OR H04W36/22 OR H04W36/24 OR H04W40/20 OR H04W48/18 OR H04W4/027 OR H04W4/029 OR H04W4/21 OR H04W4/46 OR H04W4/48 OR H04W4/90 OR H04W52/02 OR H04W52/0216 OR H04W52/0229 OR H04W52/0235 OR H04W52/146 OR H04W52/367 OR H04W52/54 OR H04W56/00 OR H04W68/005 OR H04W68/02 OR H04W72/0426 OR H04W72/044 OR H04W72/0486 OR H04W72/1215 OR H04W72/1226 OR H04W74/002 OR H04W74/0816 OR H04W74/0825 OR H04W74/0841 OR H04W76/22 OR H04W76/34 OR H04W76/36 OR H04W76/45 OR H04W80/04 OR H04W80/08 OR				

		H04W88/085 OR H04W88/12 OR H04W88/14 OR H04W88/18 OR H04W8/005 OR H04W8/02 OR H04W8/04 OR H04W8/24 OR H04W92/18).CPC.)					
L19	542308	L15 and L17	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 03:10 PM
L20	5026013	(receiv$3 OR collect$3 OR gather$3 OR obtain$3 OR get$1 OR getting OR attain$3 OR acquir$3) near10 (request$3 OR input$3 OR interact$4 OR attempt$1 OR ((ask$3 OR apply$3) adj for) OR demand$3 OR inquir$3 OR petition$2 OR demand$2 OR solict$3 OR enquir$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 03:13 PM
L21	289445	L20 AND ((H04W72/042 OR H04W76/27 OR H04W72/0413 OR H04W72/0446 OR H04W74/0833 OR H04W80/02 OR H04W72/0453 OR H04W72/1268 OR H04W68/02 OR H04W76/11 OR H04W72/04 OR H04W72/044 OR H04W72/1273 OR H04W72/1284 OR H04W72/1289 OR H04W76/15 OR H04W88/02 OR H04W16/14 OR H04W48/16 OR H04W4/80 OR H04W72/048 OR H04W76/10 OR H04W76/14 OR H04W88/04 OR H04W88/08 OR H04W24/10 OR H04W52/0229 OR H04W52/146 OR H04W72/02 OR H04W72/0466 OR H04W72/082 OR H04W72/085 OR H04W72/10 OR	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 03:15 PM

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		H04W72/1205 OR H04W76/12 OR H04W76/16 OR H04W76/19 OR H04W76/28 OR H04W84/045 OR H04W84/12 OR H04W84/18 OR H04W88/06 OR H04W16/28 OR H04W24/08 OR H04W28/0268 OR H04W28/0278 OR H04W28/06 OR H04W48/18 OR H04W4/70 OR H04W52/143 OR H04W60/005 OR H04W72/046 OR H04W72/0493 OR H04W72/12 OR H04W72/1263 OR H04W72/14 OR H04W74/006 OR H04W74/02 OR H04W74/0808 OR H04W76/30 OR H04W80/08 OR H04W80/10 OR H04W88/023 OR H04W88/16 OR H04W8/02 OR H04W8/08 OR H04W92/18 OR H04W92/20 OR H04W12/0401 OR H04W16/26 OR H04W28/0236 OR H04W28/0252 OR H04W28/085 OR H04W28/10 OR H04W28/12 OR H04W28/18 OR H04W36/0005 OR H04W36/0066 OR H04W36/0069 OR H04W36/0077 OR H04W36/0088 OR H04W36/06 OR H04W36/08 OR H04W36/22 OR H04W40/20 OR H04W48/08 OR H04W4/06 OR H04W4/08 OR H04W4/12 OR H04W4/21 OR H04W4/90 OR H04W52/02 OR H04W52/0216 OR H04W52/0235 OR					

		H04W52/325 OR H04W52/34 OR H04W52/346 OR H04W52/367 OR H04W52/38 OR H04W52/48 OR H04W52/54 OR H04W56/001 OR H04W56/0015 OR H04W56/004 OR H04W60/00 OR H04W60/06 OR H04W64/00 OR H04W68/005 OR H04W72/0406 OR H04W72/0426 OR H04W72/0486 OR H04W72/06 OR H04W72/08 OR H04W72/121 OR H04W72/1215 OR H04W72/1226 OR H04W72/1231 OR H04W72/1242 OR H04W72/1257 OR H04W74/0816 OR H04W74/0825 OR H04W74/0866 OR H04W76/20 OR H04W76/22 OR H04W76/25 OR H04W76/36 OR H04W76/45 OR H04W80/04 OR H04W84/042 OR H04W88/10 OR H04W88/14 OR H04W88/18 OR H04W8/005 OR H04W8/04 OR H04W92/10).CPC.)					
L22	7269234	(mobile adj phone OR telephone$1 OR ((mobile OR portable OR wireless OR handheld OR hand adj held OR cell OR cellular OR smart) near10 (device$1 OR computer$1 OR phone$1)) OR blackberr$3 OR pda OR iphone$1 OR ipad$1 OR smartphone$1 OR cellphone$1 OR personal adj digital adj assistant$1)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 03:25 PM
L23	520653	L22 AND ((H04W72/042 OR H04W72/1268 OR H04W76/27 OR	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 03:27 PM

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		H04W72/0446 OR H04W72/0453 OR H04W72/1273 OR H04W74/0808 OR H04W74/0833 OR H04W80/02 OR H04W72/1289 OR H04W76/15 OR H04W88/08 OR H04W48/16 OR H04W4/80 OR H04W72/0413 OR H04W76/10 OR H04W76/11 OR H04W84/12 OR H04W16/14 OR H04W72/1284 OR H04W76/16 OR H04W76/19 OR H04W88/06 OR H04W24/10 OR H04W28/0278 OR H04W72/04 OR H04W72/0493 OR H04W72/082 OR H04W72/085 OR H04W72/1205 OR H04W72/121 OR H04W72/1257 OR H04W76/12 OR H04W76/14 OR H04W76/20 OR H04W76/25 OR H04W76/28 OR H04W84/045 OR H04W88/02 OR H04W88/04 OR H04W16/26 OR H04W28/0236 OR H04W28/0268 OR H04W36/14 OR H04W36/30 OR H04W40/24 OR H04W48/18 OR H04W4/70 OR H04W56/001 OR H04W72/0466 OR H04W72/10 OR H04W72/1231 OR H04W72/1242 OR H04W72/1263 OR H04W72/14 OR H04W74/006 OR H04W74/02 OR H04W74/0866 OR H04W76/30 OR H04W80/10 OR H04W84/18 OR H04W88/023 OR H04W88/10 OR H04W88/16 OR				

		H04W8/02 OR H04W92/10 OR H04W92/20 OR H04W12/04 OR H04W12/0401 OR H04W12/04031 OR H04W16/28 OR H04W24/02 OR H04W24/08 OR H04W28/0252 OR H04W28/0284 OR H04W28/06 OR H04W28/085 OR H04W28/10 OR H04W28/12 OR H04W28/18 OR H04W36/0005 OR H04W36/0069 OR H04W36/0077 OR H04W36/08 OR H04W36/22 OR H04W36/24 OR H04W40/20 OR H04W4/029 OR H04W4/06 OR H04W4/21 OR H04W4/40 OR H04W4/44 OR H04W4/48 OR H04W4/90 OR H04W52/02 OR H04W52/0216 OR H04W52/0229 OR H04W52/0235 OR H04W52/146 OR H04W52/367 OR H04W52/54 OR H04W56/00 OR H04W60/00 OR H04W68/005 OR H04W68/02 OR H04W72/0426 OR H04W72/044 OR H04W72/048 OR H04W72/0486 OR H04W72/12 OR H04W72/1215 OR H04W72/1226 OR H04W74/002 OR H04W74/0816 OR H04W74/0825 OR H04W74/0841 OR H04W76/22 OR H04W76/34 OR H04W76/36 OR H04W76/45 OR H04W80/04 OR H04W80/08 OR H04W88/14 OR H04W8/04 OR H04W8/08 OR					

		H04W8/24 OR H04W92/18).CPC.)					
L24	5026013	(receiv$3 OR collect$3 OR gather$3 OR obtain$3 OR get$1 OR getting OR attain$3 OR acquir$3) near10 (request$3 OR input$3 OR interact$4 OR attempt$1 OR ((ask$3 OR apply$3) adj for) OR demand$3 OR inquir$3 OR petition$2 OR demand$2 OR solict$3 OR enquir$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 03:29 PM
L25	7269234	(mobile adj phone OR telephone$1 OR ((mobile OR portable OR wireless OR handheld OR hand adj held OR cell OR cellular OR smart) near10 (device$1 OR computer$1 OR phone$1)) OR blackberr$3 OR pda OR iphone$1 OR ipad$1 OR smartphone$1 OR cellphone$1 OR personal adj digital adj assistant$1)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 03:37 PM
L26	5026013	(receiv$3 OR collect$3 OR gather$3 OR obtain$3 OR get$1 OR getting OR attain$3 OR acquir$3) near10 (request$3 OR input$3 OR interact$4 OR attempt$1 OR ((ask$3 OR apply$3) adj for) OR demand$3 OR inquir$3 OR petition$2 OR demand$2 OR solict$3 OR enquir$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 03:37 PM
L27	1734579	L25 and L26	US-PGPUB; USPAT	OR	ON	ON	2020/01/20 03:37 PM
L28	134305	(wireless OR cashless OR mobile OR electronic$2 OR virtual$2 OR (electronic adj wallet$1) OR e adj wallet$1) near10 (payment$1 OR money OR monies OR monetary OR fund$3 OR dollar$1 OR currenc$5 OR (electronic$1 adj	US-PGPUB; USPAT	OR	ON	ON	2020/01/20 03:58 PM

		transfer$3) OR EFT OR (air adj pay$4) OR pay$1 OR paying)					
L29	74159	L28 AND ((G06Q20/40145 OR G06Q20/10 OR G06Q20/322 OR G06Q20/34 OR G06Q20/36 OR G06Q20/401 OR G06Q20/4016 OR G06Q50/34 OR G06Q10/087 OR G06Q20/065 OR G06Q20/102 OR G06Q20/20 OR G06Q20/3274 OR G06Q20/4012 OR G06Q20/42 OR G06Q30/0601 OR G06Q10/0833 OR G06Q20/02 OR G06Q20/32 OR G06Q20/3223 OR G06Q20/3276 OR G06Q20/341 OR G06Q20/3678 OR G06Q20/382 OR G06Q20/3825 OR G06Q20/3827 OR G06Q20/385 OR G06Q20/40 OR G06Q20/4014 OR G06Q20/405 OR G06Q20/409 OR G06Q2220/00 OR G06Q30/02 OR G06Q30/0212 OR G06Q30/0261 OR G06Q30/0631 OR G06Q30/0635 OR G06Q30/08 OR G06Q10/06315 OR G06Q10/06375 OR G06Q10/0832 OR G06Q10/08355 OR G06Q10/20 OR G06Q20/027 OR G06Q20/042 OR G06Q20/045 OR G06Q20/0855 OR G06Q20/108 OR G06Q20/1085 OR G06Q20/12 OR G06Q20/14 OR G06Q20/145 OR G06Q20/202 OR G06Q20/204 OR G06Q20/208 OR G06Q20/227 OR	US-PGPUB; USPAT	OR	ON	ON	2020/01/20 03:59 PM

		G06Q20/3227 OR G06Q20/325 OR G06Q20/327 OR G06Q20/3278 OR G06Q20/352 OR G06Q20/354 OR G06Q20/3572 OR G06Q20/3674 OR G06Q20/381 OR G06Q20/38215 OR G06Q20/3823 OR G06Q20/387 OR G06Q20/388 OR G06Q20/389 OR G06Q20/4037 OR G06Q20/425 OR G06Q30/0202 OR G06Q30/0204 OR G06Q30/0205 OR G06Q30/0214 OR G06Q30/0215 OR G06Q30/0226 OR G06Q30/0238 OR G06Q30/0241 OR G06Q30/0244 OR G06Q30/0246 OR G06Q30/0247 OR G06Q30/0248 OR G06Q30/0253 OR G06Q30/0255 OR G06Q30/0256 OR G06Q30/0267 OR G06Q30/0269 OR G06Q30/0277 OR G06Q30/0282 OR G06Q30/04 OR G06Q30/06 OR G06Q30/0607 OR G06Q30/0625 OR G06Q30/0639 OR G06Q30/0643 OR G06Q40/04 OR G06Q50/01 OR G06Q50/265 OR G07F17/3244 OR G07F17/3258 OR G07F17/3225 OR G07F17/34 OR G07F17/3211 OR G07F17/3213 OR G07F17/3223 OR G07F17/323 OR G07F17/3239 OR G07F17/3255 OR G07F17/326 OR G07F17/3288 OR G07F17/3293 OR G07F17/246 OR G07F17/32 OR G07F17/3204 OR G07F17/3206 OR				

		G07F17/3209 OR G07F17/3218 OR G07F17/322 OR G07F17/3227 OR G07F17/3232 OR G07F17/3237 OR G07F17/3241 OR G07F17/3262 OR G07F17/3267 OR G07F17/3276 OR G07F17/3279 OR G07F17/329 OR G07F17/42 OR G07F19/20).CPC.)					
L30	7269234	(mobile adj phone OR telephone$1 OR ((mobile OR portable OR wireless OR handheld OR hand adj held OR cell OR cellular OR smart) near10 (device$1 OR computer$1 OR phone$1)) OR blackberr$3 OR pda OR iphone$1 OR ipad$1 OR smartphone$1 OR cellphone$1 OR personal adj digital adj assistant$1)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 04:01 PM
L31	134305	(wireless OR cashless OR mobile OR electronic$2 OR virtual$2 OR (electronic adj wallet$1) OR e adj wallet$1) near10 (payment$1 OR money OR monies OR monetary OR fund$3 OR dollar$1 OR currenc$5 OR (electronic$1 adj transfer$3) OR EFT OR (air adj pay$4) OR pay$1 OR paying)	US-PGPUB; USPAT	OR	ON	ON	2020/01/20 04:01 PM
L32	118302	L30 and L31	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 04:01 PM
L33	5026013	(receiv$3 OR collect$3 OR gather$3 OR obtain$3 OR get$1 OR getting OR attain$3 OR acquir$3) near10 (request$3 OR input$3 OR interact$4 OR attempt$1 OR ((ask$3 OR apply$3) adj for) OR demand$3 OR inquir$3 OR petition$2 OR	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 04:03 PM

		demand$2 OR solict$3 OR enquir$3)					
L34	104076	L33 and L31	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 04:03 PM
L35	7269234	(mobile adj phone OR telephone$1 OR ((mobile OR portable OR wireless OR handheld OR hand adj held OR cell OR cellular OR smart) near10 (device$1 OR computer$1 OR phone$1)) OR blackberr$3 OR pda OR iphone$1 OR ipad$1 OR smartphone$1 OR cellphone$1 OR personal adj digital adj assistant$1)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 04:06 PM
L36	134305	(wireless OR cashless OR mobile OR electronic$2 OR virtual$2 OR (electronic adj wallet$1) OR e adj wallet$1) near10 (payment$1 OR money OR monies OR monetary OR fund$3 OR dollar$1 OR currenc$5 OR (electronic$1 adj transfer$3) OR EFT OR (air adj pay$4) OR pay$1 OR paying)	US-PGPUB; USPAT	OR	ON	ON	2020/01/20 04:06 PM
L37	118302	L35 and L36	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 04:06 PM
L38	5026013	(receiv$3 OR collect$3 OR gather$3 OR obtain$3 OR get$1 OR getting OR attain$3 OR acquir$3) near10 (request$3 OR input$3 OR interact$4 OR attempt$1 OR ((ask$3 OR apply$3) adj for) OR demand$3 OR inquir$3 OR petition$2 OR demand$2 OR solict$3 OR enquir$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 04:06 PM
L39	104076	L38 and L36	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 04:06 PM
L40	95881	L37 and L39	US-PGPUB; USPAT;	OR	ON	ON	2020/01/20

			FPRS; EPO; JPO; DERWENT				04:06 PM
L41	39	("20180181945" "9875473" "20170161706" "20150170131" "20170255933" "20150170132" "9659296" "20150170130" "9256873" "20150227928" "20150170129" "20150170136" "9547859" "20170193508" "20160098711" "20150170145" "20150169312" "10438208" "9134994" "8856045" "20180165908" "20150178702" "20020156727" "20020156704" "20120323670" "7805338" "20100044444" "20150095235" "8915447" "20130018742" "20120267437" "20120323653" "9384480" "20150006386" "20150066760" "8925827" "20130013352" "8275312" "20090070272").pn.	US-PGPUB; USPAT	OR	ON	ON	2020/01/20 04:10 PM
L42	39	L40 and L41	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 04:10 PM
L43	144	("20080167991"|"20080255947"|"7127236"|"7721958"|"8583496"|"8769643"|"20120029691"|"20120276845"|"20130030931"|"20130185150"|"8438066"|"8479190"|"20020164953"|"20150073980"|"D599806"|"D651608"|"D662942"|"D692456"|"D716339"|"D720765"|"D727337"|"D746866"|"20070187491"|"20080033880"|"20080154735"|"20080201226"|"6584309"|"7848980"|	US-PGPUB; USPAT	OR	ON	ON	2020/01/20 04:12 PM

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		8412626"|"8615445"|"88 38481"|"20050101295"|" 20110276636"|"8707276 "|"20030110097"|"20130 297422"|"20140067542"| "8712893"|"D496370"|"D 640282"|"D644240"|"D70 5244"|"D735236"|"20120 254631"|"20040049454"| "20080183480"|"854842 6"|"8700530"|"20090171 682"|"8600899"|"200900 99961"|"20100094456"|" 20130278622"|"2015010 5901"|"8898620"|"20090 306818"|"20050177798"| "20110289023"|"767268 0"|"9001047"|"D578135"| "20130346305"|"200301 58891"|"8645971"|"2008 0141033"|"20140136301 "|"8600899"|"200601233 35"|"20080254853"|"201 60019604"|"9210247"|"D 614640"|"D640284"|"D65 6947"|"D662508"|"D6816 60"|"D727341"|"2014008 5046"|"6462644"|"83466 70"|"8396589"|"8489140" |"8517766"|"8856045"|"2 0070050083"|"20080126 213"|"20090306818"|"20 090313132"|"201400747 14"|"20150081462"|"200 30158891"|"2014036187 2"|"20060052157"|"2012 0296826"|"20130067365 "|"20140136411"|"20150 100152"|"5880733"|"D61 3300"|"D638853"|"D6586 67"|"D681050"|"D695305 "|"D706802"|"D726736"|" D736248"|"D748113"|"83 76227"|"20120016731"|" 20140122298"|"8819659 "|"20130143498"|"20140 279101"|"20150088698"| "D467935"|"D687056"|"D 724603"|"20080154727"| "20080208762"|"584480 8"|"5892900"|"8356754"|" 20120158172"|"2014031 7611"|"7455223"|"20140 064116"|"20090171682"| "7464867"|"D594024"|"D 664988"|"7085556"|"859 6528"|"20030158891"|"2 0120316963"|"20130332 293"|"8850421"|"200502 32421"|"20140378057"|" 6793134"|"20130110296					

CSC ServiceWorks – Ex. 1002
Page 313 of 367

		"|"20150235202"|"20150346994"|"D631060"|"D651609"|"D701527"|"D726757"|"D735751"|"D741897"|"6810234").PN.					
L44	7269234	(mobile adj phone OR telephone$1 OR ((mobile OR portable OR wireless OR handheld OR hand adj held OR cell OR cellular OR smart) near10 (device$1 OR computer$1 OR phone$1)) OR blackberr$3 OR pda OR iphone$1 OR ipad$1 OR smartphone$1 OR cellphone$1 OR personal adj digital adj assistant$1)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 04:12 PM
L45	134305	(wireless OR cashless OR mobile OR electronic$2 OR virtual$2 OR (electronic adj wallet$1) OR e adj wallet$1) near10 (payment$1 OR money OR monies OR monetary OR fund$3 OR dollar$1 OR currenc$5 OR (electronic$1 adj transfer$3) OR EFT OR (air adj pay$4) OR pay$1 OR paying)	US-PGPUB; USPAT	OR	ON	ON	2020/01/20 04:12 PM
L46	118302	L44 and L45	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 04:12 PM
L47	5026013	(receiv$3 OR collect$3 OR gather$3 OR obtain$3 OR get$1 OR getting OR attain$3 OR acquir$3) near10 (request$3 OR input$3 OR interact$4 OR attempt$1 OR ((ask$3 OR apply$3) adj for) OR demand$3 OR inquir$3 OR petition$2 OR demand$2 OR solict$3 OR enquir$3)	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 04:12 PM
L48	104076	L47 and L45	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 04:12 PM
L49	95881	L46 and L48	US-PGPUB; USPAT; FPRS; EPO; JPO;	OR	ON	ON	2020/01/20 04:12 PM

			DERWENT				
L50	39	("20180181945" "9875473" "20170161706" "20150170131" "20170255933" "20150170132" "9659296" "20150170130" "9256873" "20150227928" "20150170129" "20150170136" "9547859" "20170193508" "20160098711" "20150170145" "20150169312" "10438208" "9134994" "8856045" "20180165908" "20150178702" "20020156727" "20020156704" "20120323670" "7805338" "20100044444" "20150095235" "8915447" "20130018742" "20120267437" "20120323653" "9384480" "20150006386" "20150066760" "8925827" "20130013352" "8275312" "20090070272").pn.	US-PGPUB; USPAT	OR	ON	ON	2020/01/20 04:12 PM
L51	39	L49 and L50	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 04:12 PM
L52	1	L43 and L51	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	ON	2020/01/20 04:12 PM
L53	144	("20080167991"|"20080255947"|"7127236"|"7721958"|"8583496"|"8769643"|"20120029691"|"20120276845"|"20130030931"|"20130185150"|"8438066"|"8479190"|"20020164953"|"20150073980"|"D599806"|"D651608"|"D662942"|"D692456"|"D716339"|"D720765"|"D727337"|"D746866"|"200701874	US-PGPUB; USPAT	OR	ON	ON	2020/01/20 05:23 PM

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		"20100044444" "20120323670" "8915447" "9342829" "20120267437" "20130018742" "20150066760").pn.					

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N1	77	(paresh.in. AND patel.in.)	US-PGPUB; USPAT	OR	ON	ON	2020/10/19 07:23 PM
N2	1130321	(vending OR (parking ADJ meter$1) OR toll$1 OR laundromat$1 OR game$1 OR (photo ADJ booth$1) OR dispens$3 OR (payment ADJ (accept$3 OR operat$3)) OR gaming OR slot$1) near10 (machine$1 OR booth$1 OR unit$1 OR equipment$1 OR device$1 OR apparatus)	US-PGPUB; USPAT	OR	ON	ON	2020/10/19 07:24 PM
N3	2713245	(nearfield OR wireless$2 OR WiFi OR Wi-Fi OR Bluetooth$1 OR (blue ADJ tooth$1) OR NFC OR (short ADJ range) OR short ADJ wavelength$1 OR BLE OR nearfield OR WAN)	US-PGPUB; USPAT	OR	ON	ON	2020/10/19 07:25 PM
N4	3242092	(receiv$3 OR collect$3 OR gather$3 OR obtain$3 OR get$1 OR getting OR attain$3 OR acquir$3) near10 (request$3 OR input$3 OR interact$4 OR attempt$1 OR ((ask$3 OR apply$3) ADJ for) OR demand$3 OR inquir$3 OR petition$2 OR demand$2 OR solict$3 OR enquir$3)	US-PGPUB; USPAT	OR	ON	ON	2020/10/19 07:25 PM
N5	3665624	(mobile ADJ phone OR telephone$1 OR ((mobile OR portable OR wireless OR handheld OR hand ADJ held OR cell OR cellular OR smart) near10 (device$1 OR	US-PGPUB; USPAT	OR	ON	ON	2020/10/19 07:26 PM

		computer$1 OR phone$1)) OR blackberr$3 OR pda OR iphone$1 OR ipad$1 OR smartphone$1 OR cellphone$1 OR personal ADJ digital ADJ assistant$1)					
N6	144689	(wireless OR cashless OR mobile OR electronic$2 OR virtual$2 OR (electronic ADJ wallet$1) OR e ADJ wallet$1) near10 (payment$1 OR money OR monies OR monetary OR fund$3 OR dollar$1 OR currenc$5 OR (electronic$1 ADJ transfer$3) OR EFT OR (air ADJ pay$4) OR pay$1 OR paying)	US-PGPUB; USPAT	OR	ON	ON	2020/10/19 07:28 PM
N7	36	N1 AND N2 AND N3 AND N4	US-PGPUB; USPAT	OR	ON	ON	2020/10/19 07:29 PM
N8	127381	N5 AND N6	US-PGPUB; USPAT	OR	ON	ON	2020/10/19 07:30 PM

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 1006

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
15/878,352	01/23/2018	705	3696	104402-5035-US

APPLICANTS
Payrange Inc., Portland, OR;

INVENTORS
Paresh K. Patel, Portland, OR;

**** CONTINUING DATA ***************************
This application is a CON of 14/458,192 08/12/2014 PAT 9875473
which is a CIP of 14/456,683 08/11/2014 PAT 9256873
which is a CON of 14/335,762 07/18/2014 PAT 9547859
which is a CON of 14/214,644 03/14/2014 PAT 8856045
which claims benefit of 61/917,936 12/18/2013
and is a CIP of 29/477,025 12/18/2013 PAT D755183

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
02/15/2018

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☑ Yes ☐ No Verified and Acknowledged /JOHN H HOLLY/ Examiner's Signature	☐ Met after Allowance JHH Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		OR	45	20	4

ADDRESS
Morgan, Lewis & Bockius LLP (PA)
1400 Page Mill Road
Palo Alto, CA 94304-1124
UNITED STATES

TITLE
METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS

FILING FEE RECEIVED		
1015	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

BIB (Rev. 05/07).

PART B - FEE(S) TRANSMITTAL

Electronically filed December 4, 2020

Complete and send this form with applicable fee(s), to: Mail
Mail Stop ISSUE FEE
Commissioner of Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571) 273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advanced orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS

MORGAN, LEWIS & BOCKIUS LLP
1400 Page Mill Road
Palo Alto, CA 94304

Note: A certificate of mailing below can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing.

Certificate of Mailing

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)

(Signature)

(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTY'S DOCKET NO.	CONFIRMATION NO.
15/878,352	01/23/2018	Paresh K. Patel	104402-5035-US	1006

TITLE OF INVENTION **METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS**

APPLN. TYPE	ENTITY STATUS	ISSUE FEE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0	$600	01/25/2021

EXAMINER	ART UNIT	CLASS-SUB CLASS
HOLLY, JOHN H	3696	705-044000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed

1. **Morgan, Lewis & Bockius LLP**
2.
3.

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: PAYRANGE INC.

(B) RESIDENCE: (CITY and STATE OR COUNTRY) PORTLAND, OR

Please check the appropriate assignee category or categories (will not be printed on the patent) ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☒ Issue Fee

☐ Advanced Order - # of Copies _____

4b. Payment of Fee(s): (**Please first reapply any previously paid issue fee shown above.**)

☒ Electronic Payment via Financial Manager

☐ Non-electronic payment by credit card. Form PTO-2038 is attached.

☒ The Director is hereby authorized to charge the required fee(s), or credit any overpayment, to Deposit Account Number 50-0310 (order no. 104402-5035-US).

5. **Change in Small Entity Status** (from status indicated above)

☐ a. Applicant certifying micro entity status. See 37 CFR 1.29.
NOTE: Absent a valid certification of Micro Entity (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

☐ Applicant asserting small entity status. See 37 CFR 1.27.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

☐ Applicant changing to regular undiscounted fee status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be sign in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature: /Douglas J. Crisman/ Date: December 4, 2020

Printed Name: Douglas J. Crisman Registration No. 39,951

DB2/ 39988687.1

Electronic Patent Application Fee Transmittal

Application Number:	15878352
Filing Date:	23-Jan-2018
Title of Invention:	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS
First Named Inventor/Applicant Name:	Paresh K. Patel
Filer:	Douglas James Crisman/Linda Quintana
Attorney Docket Number:	104402-5035-US

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	600	600

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**600**

Electronic Acknowledgement Receipt

EFS ID:	41303484
Application Number:	15878352
International Application Number:	
Confirmation Number:	1006
Title of Invention:	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS
First Named Inventor/Applicant Name:	Paresh K. Patel
Customer Number:	24341
Filer:	Douglas James Crisman/Linda Quintana
Filer Authorized By:	Douglas James Crisman
Attorney Docket Number:	104402-5035-US
Receipt Date:	04-DEC-2020
Filing Date:	23-JAN-2018
Time Stamp:	18:37:43
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$600
RAM confirmation Number	E2020B4I38190136
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	104402-5035-US_IssueFee_04-DEC-2020.pdf	126675 b4f8d0f145b02c1a671c4d5302f9dc5cc23c71ee	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30332 6219aed7b95c9b2f9a585a45d3c773004fcf3b59	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	157007		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/878,352	01/12/2021	10891608	104402-5035-US	1006

24341 7590 12/22/2020

Morgan, Lewis & Bockius LLP (PA)
1400 Page Mill Road
Palo Alto, CA 94304-1124

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 216 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Payrange Inc., Portland, OR;
Paresh K. Patel, Portland, OR;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

Electronically filed February 19, 2021

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent:	PATEL	Confirmation No.:	1006
Patent No.:	10,891,608	Serial No.:	15/878,352
Issued:	January 12, 2021	Filed:	January 23, 2018
For:	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS	Attorney Docket No:	104402-5035-US

REQUEST FOR CERTIFICATE OF CORRECTION

Certificate of Corrections Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Upon review of the subject patent, Patentee's attorney discovered 1 error on the part of the Applicant. Patentee's attorney requests correction of the issued patent. A Form PTO 1050 Certificate of Correction is enclosed.

The Commissioner is authorized to charge required fees to our Deposit Account No. 50-0310 (order no. 104402-5035-US).

Respectfully submitted,

Date: February 19, 2021

/Douglas J. Crisman/ 39,951

Douglas J. Crisman (Reg. No.)
MORGAN, LEWIS & BOCKIUS LLP
1400 Page Mill Road
Palo Alto, California 94304
(650) 843-4000

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO.	:	10,891,608
APPLICATION NO.	:	15/878,352
ISSUE DATE	:	January 12, 2021
INVENTOR(S)	:	PATEL

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In the Bibliography, (71) Applicant: please delete "**Payrange Inc.**," and insert --**PayRange Inc.**,--.

MAILING ADDRESS OF SENDER:
MORGAN, LEWIS & BOCKIUS LLP
1400 Page Mill Road
Palo Alto, CA 94304
(650) 843-4000

Electronic Patent Application Fee Transmittal

Application Number:	15878352
Filing Date:	23-Jan-2018
Title of Invention:	METHOD AND SYSTEM FOR AN OFFLINE-PAYMENT OPERATED MACHINE TO ACCEPT ELECTRONIC PAYMENTS
First Named Inventor/Applicant Name:	Paresh K. Patel
Filer:	Douglas James Crisman/Deborah Carney
Attorney Docket Number:	104402-5035-US

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
CERTIFICATE OF CORRECTION	1811	1	160	160

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**160**

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First Named Inventor/Applicant Name:	Paresh K. Patel
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1	Request for Certificate of Correction	104402-5035US_COC.pdf	287948 9d9365624d879832e0a5e414f5a9fdd6c364a16c	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30354 3d47468ac728e424a21600525edcf1d220ac9147	no	2
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EXAMINER	
HOLLY, JOHN H	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

padocketingdepartment@morganlewis.com
vskliba@morganlewis.com

Response to the Request for Certificate of Correction	Patent No. 10891608	Applicant(s) Patel, Paresh K.
	Issue Date 01/12/2021	Docket No. 104402-5035-US

This is in response to the request for a Certificate of Correction filed 19 February 2021

☑ **Request Denied** - Consideration has been given to your request for the issuance of a Certificate of Correction under the provisions of 37 CFR 1.322 and/or 37 CFR 1.323. The Request is improper and denied for the reason(s) below:

1. ☐ Assignees' names and addresses (assignment data) printed in a patent, are based solely on information supplied in the appropriate space for identifying the assignment data on the Issue Fee Transmittal Form (PTOL-85b). Any request for a patent to be corrected to state the name of the assignee, must state that the assignment was submitted for recordation as set forth in in 37 CFR 3.11 before issuance of the patent. Petition under 3.81 is to be filed for consideration of correction to assignee. The petition fee set forth in 37 CFR 1.17(i)(1) (currently $140, $70, $35 for large, small and micro entities, respectively.

2. ☐ The alleged error in _____, is in fact an Amendment and/or Change made by the examiner and considered to be in accordance with the permissible amendments enumerated in the Manual of Patent Examining Procedure (MPEP) Section 1302.04. Applicant did not file objection or amendment under 37 CFR 1.312 prior to payment of the issue fee.

3. ☐A petition under CFR 1.182 is required to correct the alleged errors in spelling or order of inventor's names, since inventor's names are printed solely in accordance with the type-written names, and in the order of the type-written names on the Application Data Sheet (ADS). The required fee currently under rule 1.17(f) (small entity $200, large entity $400, micro entity fee $100).

4. ☐ With respect to the alleged error in changing the inventor name on the patent due to clerical error in ADS/OATH of related patents. The inventors name is printed in accordance with the OATH/ADS submitted at the time of filing the application. However, your attention is directed to C.F.R. 1.324, wherein a request is being made to change, add or delete inventor(s), after issuance of the patent.

5. ☐ With respect to the alleged error in _____, comparison of the printed patent with the corresponding location in the application file reveals that there is no discrepancy.

6. ☐ With respect to 37 CFR 1.72, the title should be brief but technically accurate and descriptive and should contain fewer than 500 characters. Inasmuch as the words "new," "improved," "improvement of," and "improvement in" are not considered as part of the title of an invention, these words should not be included at the beginning of the title of the invention and will be deleted when the Office enters the title into the Offices computer records, and when any patent issues.

7. ☐ The fee for correction under 37 CFR 1.323 is set forth in 37 CFR 1.20(a). ☐Partial fee ☐No fee was received with your request. Full fee payment is required before further action is taken on this request.

8. ☐ With respect to the request for corrected Letters Patent (Grant), corrections to the original Letters Patent are made under the provisions of Rule 1.322(b), not Rule1.323, unless a petition is granted.

9. ☑ Other Comments: See Continuation Sheet

Further correspondence concerning this matter should be filed and directed to the Certificates of Correction Branch.

Legal Instrument Examiner: /VALERIE JACKSON/ Phone: (571)272-3423
LIE, ODM
Certificates of Correction Branch email: CustomerServiceCoC@uspto.gov CoC Central Phone Number: (703)756-1814

If applicable, information regarding a petition under 37 CFR 1.183 should be directed to the attention of the Commissioner for Patents using the FAX number (571) 273-8300

Continuation of Other Comments: The Applicant name on front page of patent was taken from the Applicant section of the Application Data Sheet (ADS), or the applicant was the inventor(s) if no applicant was specified in the ADS. No request to change the applicant in compliance with 37 CFR 1.46 (c) was filed during the pendency of the application. Since what is listed on the patent is correct relative to the patent application file record from which the patent issued, no correction is in order under 37 CFR 1.322 or 1.323.

Trials@uspto.gov
571-272-7822

Paper 12
Date: December 16, 2021

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KIOSOFT TECHNOLOGIES, LLC and TECHTREX, INC.,
Petitioner,

v.

PAYRANGE INC.,
Patent Owner.

PGR2021-00084
Patent 10,891,608 B2

Before MEREDITH C. PETRAVICK, STACEY G. WHITE, and GEORGE R. HOSKINS, *Administrative Patent Judges.*

PETRAVICK, *Administrative Patent Judge.*

DECISION
Denying Institution of Post-Grant Review
35 U.S.C. § 324(a)

I. INTRODUCTION

A. *Background and Summary*

KioSoft Technologies, LLC and TechTrex, Inc. (collectively, "Petitioner") filed a Petition requesting post-grant review of claims 1–20 of U.S. Patent No. 10,891,608 B2 (Ex. 1002, "'608 patent"). Paper 2 ("Pet."). PayRange Inc. ("Patent Owner") filed a Preliminary Response. Paper 6

("Prelim. Resp."). With our authorization, Petitioner filed a Reply (Paper 8, "Reply") and Patent Owner filed a Sur-reply (Paper 9, "Sur-reply").

As set forth in 35 U.S.C. § 324(a), a post-grant review may not be instituted unless "the information presented in the petition filed under section 321, if such information is not rebutted, would demonstrate that it is more likely than not that at least 1 of the claims challenged in the petition is unpatentable."[1]

After considering the Petition, the Preliminary Response, Reply, Sur-reply and the evidence of record, we determine that Petitioner fails to demonstrate that it is more likely than not that at least one of the claims challenged in the Petition is unpatentable. Accordingly, we do not institute a post-grant review.

B. *Related Matters*

The '608 patent is the subject of *PayRange Inc. v. KioSoft Technologies, LLC et al.*, Case No. 1:20-cv-24342, in the U.S. District Court for the Southern District of Florida ("the district court litigation"). Pet. 11; Paper 3, 2. Related U.S. Patent Nos. 10,719, 833 and 10,891,614 are also the subject of the district court litigation. U.S. Patent No. 10,719,833 is challenged in PGR2021-00077 and U.S. Patent No. 10,891,614 is challenged in PGR2021-00093.

The '608 patent is related to U.S. Patent No. 9,659,296 and U.S. Patent No. 9,134,994, which are the subject of *PayRange Inc. v. Kiosoft Technologies, LLC et al.*, Case No. 1:20-cv-20970-RS in the U.S. District Court for the Southern District of Florida ("the '20970 district court

[1] Petitioner incorrectly states the standard for post-grant review as whether the Petition "shows a reasonable likelihood that the Petitioners will prevail on at least one of the challenged claims." Pet. 10.

litigation"). Pet. 11; Paper 3, 2. U.S. Patent No. 9,659,296 was challenged in CBM2020-00026 and IPR2021-00086, in which we exercised discretion respectively under 35 U.S.C. § 324(a) and § 314(a) to deny institution. Pet. 11; Paper 3, 2.

C. *The '608 Patent*

The '608 patent is titled "Method and System for an Offline-Payment Operated Machine to Accept Electronic Payments" and issued on January 12, 2021. Ex. 1002, codes (45), (54). The '608 patent claims priority, through a chain of patent applications, to a provisional patent application filed on December 18, 2013. *Id.* at code (63).

The '608 patent describes retrofitting an offline-payment operated machine, such as a coin-operated vending machine, to accept electronic payments. *See generally id.* at 39:38–46:5; Figs. 28A–B, 29A–B, 30. Figure 28A of the '608 patent is reproduced below.

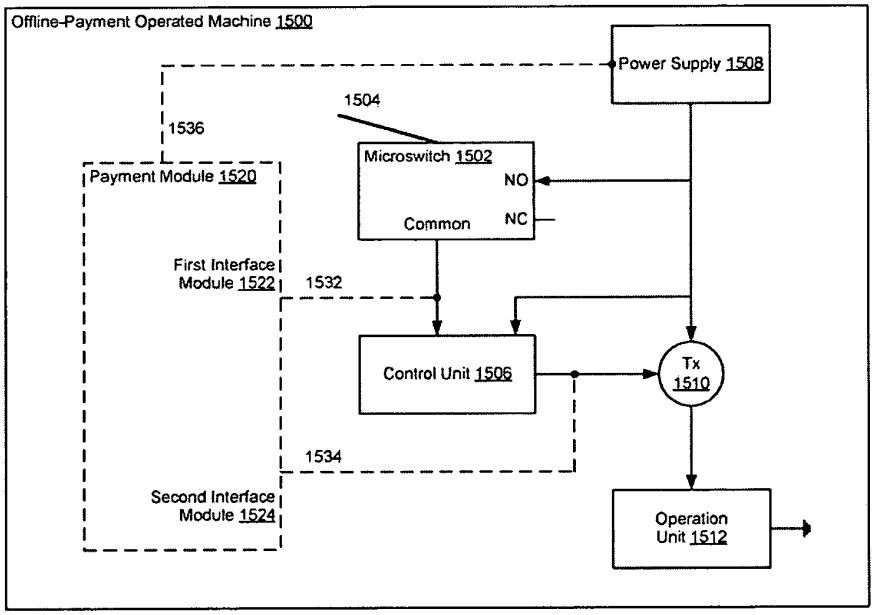


Figure 28A

Figure 28A depicts a block diagram of offline-payment operated machine 1500. *Id.* at 39:38–40. "[O]ffline-payment operated machine 1500 . . . is an electro-mechanical machine capable of accepting currency (e.g., coins), which is not connected to any networks (e.g., telephone, cellular, or Wi-Fi)." *Id.* at 39:40–44. Offline-payment operated machine 1500 has microswitch 1502, control unit 1506, and operation unit 1512. *Id.* at 39:49–51. Mircoswitch 1502 has a lever 1504 in offline-payment operated machine 1500's coin slot. *Id.* at 39:57–65. When a coin slides down the coin slot, lever 1504 is depressed, closing microswitch 1502 and sending a pulse to control unit 1506. *Id.* at 39:61–40:6. "[W]hen the control unit 1506 receives a preset sequence of payment acceptance signals indicative of a preset number of coins being received by the microswitch 1502, the control unit 1506 initiates the operation of the offline-payment operated machine 1500." *Id.* at 40:7–11.

Offline-payment operated machine 1500 is retrofitted to accept electronic payments by installing payment module 1520. *Id.* at 40:22–26. Payment module 1520 has first interface module 1522 and second interface module 1524, which sample payment acceptance signals from microswitch 1520 and control signals from control unit 1506 to initiate operation of machine 1500, respectively. *Id.* at 40:35–49. "By sampling and storing these signals, the payment module 1520 is able to simulate operation of a respective coin receiving switch in response to receiving the correct/preset number of coins so as to trigger operation of the offline-payment operated machine in response to completion of an electronic payment." *Id.* at 41:43–48, 42:55–65.

D. *Illustrative Claim*

Claims 1, 7, 13, and 19 are independent. Claims 2–6 depend from claim 1. Claims 8–12 depend from claim 7. Claims 14–18 depend from claim 13. Claim 20 depends from claim 19. Claim 1 is illustrative of the claimed subject matter and is reproduced below with bracketed material added.

> 1. [1.0][2] A payment module for an offline payment-operated machine including a coin receiving switch, the payment module comprising:
>
> [1.1] a short-range wireless transceiver configured to communicate with one or more mobile devices;
>
> [1.2] one or more processors;
>
> [1.3] a first interface module configured to output to a control unit of the offline payment-operated machine one or more electrical pulses, each of the one or more electrical pulses emulating an analog signal generated by the coin receiving switch of the offline payment-operated machine in response to insertion of a single coin of a predetermined type in the offline payment-operated machine; and
>
> [1.4a] memory with one or more programs for execution by the one or more processors, the one or more programs including instructions for:
>
> [1.4b] storing, in the memory of the payment module, a number of the electrical pulses that must be received by the control unit to initiate an operation of the offline payment operating machine;
>
> [1.4c] receiving a wireless request via the short-range wireless transceiver from a respective mobile device of the one or more mobile devices to initiate a cashless operation of the offline-payment operated machine; and

[2] Petitioner's designations to reference the elements of claim 1 are set forth in brackets. Herein we refer to the elements of claim 1 using Petitioner's designations. *See* Pet. 54–64.

[1.4d1] in response to the wireless request:
determining a first number of electrical pulses to output via the first interface module to the control unit of the offline payment-operated machine in order to initiate the requested cashless operation of the offline payment-operated machine;
[1.4d2] causing the offline payment-operated machine to initiate the requested cashless operation by issuing the first number of electrical pulses to the control unit via the first interface module; and
[1.4d3] sending operation information corresponding to the initiated operation of the offline payment-operated machine to the respective mobile device via the short-range wireless transceiver.

Ex. 1002, 46:62–47:34.

E. *Prior Art and Asserted Grounds*

Petitioner asserts that claims 1–20 are unpatentable on the following grounds:

Claims Challenged	35 U.S.C. §	Basis/ Reference(s)
19–20	112(a)	Lack of Written Description
1–20	112(b)	Indefiniteness
5, 11, 17	112(d)	Failure to Further Limit
1–20	102	Breitenbach[3]
1–20	103	Breitenbach, Yung[4]
1–20	103	Breitenbach, Cole[5]

Pet. 14–15. Petitioner relies on the Declaration of Gerald Smith (Ex. 1005).

[3] U.S. Patent No. 9,092,768 B2 (issued July 28, 2015) (Ex. 1007) ("Breitenbach").
[4] U.S. Patent No. 7,110,954 B2 (issued Sept. 19, 2006) (Ex. 1011) ("Yung").
[5] U.S. Patent No. 6,743,095 B2 (issued June 1, 2004) (Ex. 1014) ("Cole").

II. ANALYSIS

A. *Discretionary Denial under 35 U.S.C. § 324(a)*

Patent Owner contends we should exercise our discretion under 35 U.S.C. § 324(a) to deny institution of post-grant review. Prelim. Resp. 10–18 (citing, *e.g.*, *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) ("*Fintiv*")).

Because we determine that Petitioner fails to demonstrate that, if unrebutted, it is more likely than not that at least one of the claims challenged in the Petition is unpatentable, we need not address Patent Owner's contentions concerning discretionary denial.

Accordingly, we do not exercise our discretion to deny institution under 35 U.S.C. § 324(a).

B. *Level of Ordinary Skill*

Petitioner contends:

> A [person having ordinary skill in the art ("POSITA")], as of the date of the alleged invention, would have had an education background of, or practical experience providing an equivalent to, a Bachelor of Science in Electrical Engineering, Computer Science, Information Technology, or a related/equivalent field and at least three years of work experience in electronic payment systems, vending machine technologies, or telecommunication solutions.

Pet. 29 (citing Ex. 1005 ¶ 52). Patent Owner does not dispute Petitioner's contention in its Preliminary Response. *See generally* Prelim. Resp.

Based on the record before us, we adopt Petitioner's asserted level of ordinary skill to determine whether it is more likely than not that at least one of the claims challenged in the Petition is unpatentable. This level of skill in the art is consistent with the disclosure of the '608 patent and the prior art of record. *See In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995).

C. *Claim Construction*

We interpret a claim "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b)." 37 C.F.R. § 42.200(b) (2020). This standard requires that we construe claims "in accordance with the ordinary and customary meaning of such claim[s] as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." *Id.*; *see also Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). Only those terms that are in controversy need be construed, and only to the extent necessary to resolve the controversy. *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999); *see also Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (applying *Vivid Techs.* in the context of an AIA trial proceeding).

Petitioner proposes constructions of the following claim limitations:

1) "offline payment-operated machine";

2) "interface";

3) "storing, in the memory of the payment module, a number of the electrical pulses that must be received by the control unit to initiate an operation of the offline payment operating machine";

4) "initiate a cashless operation of the offline-payment operated machine"; and

5) "sending operation information corresponding to the initiated operation of the offline payment-operated machine to the respective mobile device via the short-range wireless transceiver."

Pet. 16–18. For each proposed construction, the Petition merely cites to the Declaration of Gerald Smith and docs not provide any substantive

explanation as to why we should adopt Petitioner's proposed constructions. *See id.* (citing Ex. 1005 ¶¶ 73–104).

Patent Owner contends that the Petition is deficient in the manner that it construes claims because it does not evaluate the claim language, specification, and prosecution history. Prelim. Resp. 7. Patent Owner states that "Petitioners merely cite their expert's conclusory language, which simply adopts Petitioners' own constructions using substantially-similar language as the [P]etition." *Id.* (citing Ex. 1005 ¶¶ 73–104). Patent Owner argues that "[f]or the purposes of this preliminary response, no construction of the claims is required to deny institution." *Id.* at 8.

On this record, we determine that only the term "offline payment-operated machine" requires construction to the extent discussed below and that no other claim term requires explicit construction. *See Vivid Techs.*, 200 F.3d at 803 (construing explicitly only those claim terms in controversy and only to the extent necessary to resolve the controversy).

"offline payment-operated machine"

Petitioner proposes that "offline payment-operated machine" should be construed to mean

> a machine that is not connected to any network and that accepts cash to perform an operation, wherein the machine includes a coin receiving switch that generates an analog signal in response to insertion of a single coin of a predetermined type in the machine.

Pet. 17. As support for its construction, Petitioner cites to the Declaration of Gerald Smith and does not provide any other substantive explanation as to why we should adopt Petitioner's proposed construction in the Petition. *See id.* (citing Ex. 1005 ¶¶ 82–84). Mr. Smith testifies that the term "offline payment-operated machine" would not have a plain and customary meaning

to a POSITA, but that a POSITA would have understood the term "offline" to mean not connected to any network. Ex. 1005 ¶¶ 82–83. Mr. Smith also testifies:

> Based on my review of the entirety of the '608 patent, I found col. 39, lines 39–45 of the specification to be informative regarding the meaning of the term, "offline payment-operated machine." Specifically, EX1002, 39:39–45 describe[s] the "offline-payment operated machine" to be "an electro-mechanical machine capable of accepting currency (e.g., coins), which is not connected to any networks (e.g., telephone, cellular, or Wi-Fi)."

Id. ¶ 84.

Patent Owner disagrees with Petitioner's construction and argues that "Petitioners fail to explain why the machine's 'offline' payment operability necessarily precludes the machines from also having, at least in some circumstances, a network connection." Prelim. Resp. 8. According to Patent Owner, the '608 patent discloses some embodiments in which "the offline payment-operated machine also can have 'online' payment operability" (*id.* at 9 (citing Ex. 1002, 6:41–63, 9:23–27, 9:42–50)) and other embodiments in which the "offline payment-operated machine is not connected to any persistent networks" (*id.* (citing Ex. 1002, 9:46–48, 9:64–67, 22:8–12, 39:38–48)). Patent Owner further argues, under the doctrine of claim differentiation, that dependent claims 5, 11, and 17 "specify that the machine is not connected to any networks indicates that the machine as recited in claim[] 1 is not so limited." *Id.* at 8–9.

We are not persuaded by Petitioner's arguments because Petitioner's proposed construction improperly attempts to read a particular embodiment described in the '608 patent into the claims. It is not proper to read limitations from the '608 patent into the claims:

> Though understanding the claim language may be aided by the explanations contained in the written description, it is important not to import into a claim limitations that are not a part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.

SuperGuide Corp. v. DirecTV Enters., Inc., 358 F.3d 870, 875 (Fed. Cir. 2004). "[A]lthough the specification often describes very specific embodiments of the invention, [the Federal Circuit has] repeatedly warned against confining the claims to those embodiments." *Phillips*, 415 F.3d at 1323.

As Mr. Smith points out, the '608 patent does describe offline-payment operated machine 1500 as an electro-mechanical machine capable of accepting currency (e.g., coins), which is not connected to any networks (e.g., telephone, cellular, or Wi-Fi). Ex. 1005 ¶ 84 (citing Ex. 1002, 39:39–45). But, the '608 patent describes offline-payment operated machine 1500 as merely one *example* of an offline-payment operated machine in *some implementations*. The '608 patent states:

> FIG. 28A illustrates a block diagram of an offline-payment operated machine 1500 *in accordance with some implementations*. *For example*, the offline-payment operated machine 1500 *(e.g., a form of the machine 120)* is an electro-mechanical machine capable of accepting currency (e.g., coins), which is not connected to any networks (e.g., telephone, cellular, or Wi-Fi). *For example,* the offline-payment operated machine 1500 is a washer or dryer at a laundromat, a parking meter, a car wash payment kiosk, or other offline-payment operated machine that dispenses goods and/or services.

Ex. 1002, 39:38–48 (emphases added). The '608 patent emphasizes that offline-payment operated machine 1500 is merely an example. *Id.* at 39:52–56 ("The components of the offline-payment operated machine 1500 in FIG. 28A are examples and one of skill in the art will appreciate that various

other components may be included in or excluded from the offline-payment operated machine 1500."). Petitioner provides no sufficient explanation as to why the language of the claims restricts the claims to this embodiment.

We are not persuaded by Mr. Smith's testimony that a POSITA would have understood the term "offline" to mean not connected to any network (Ex. 1005 ¶ 82) because Mr. Smith's testimony is inconsistent with the '608 patent's disclosure. The '608 patent describes that offline-payment operated machine 1500 is a form of payment accepting unit or machine 120. *Id.* at 39:40–41. As Patent Owner points out (Prelim. Resp. 9), the '608 patent discloses payment accepting units or machines 120 that are machines connected to a network connection, but may be temporarily offline. For example, the '608 patent discloses:

> Although payment accepting units (or "machines") that accept only cash (e.g., paper currency and coins) may not require a connection (persistent or non-persistent) to a network, traditional payment accepting units that accept cashless payments (e.g., credit cards, debit cards, and alternative mobile device payment methods, using, for example, smart phones) require a persistent connection to a network (wired or wireless) to facilitate the cashless payments. In other words, without a persistent (ongoing or accessible on demand) network connection, traditional payment accepting units cannot accept cashless payments. *Most traditional payment accepting units that accept cashless payments include the technology to accomplish this persistent network connection that allows them to connect to a remote server. If the network connection to a traditional machine is temporarily interrupted, cashless payments will be temporarily unavailable. If the machine is located in a location where no network connection is available, cashless payments is not possible.*

Ex. 1002, 6:30–48 (emphasis added); *see also id.* at 9:42–46 ("Traditionally, machines that accept payment other than cash require a persistent (ongoing

or accessible on demand) connection to a network to facilitate payment. This is true for machines that accept, for example, credit cards and debit cards").

Further, we are persuaded by Patent Owner that the doctrine of claim differentiation indicates that the term *offline payment-operated machine* as recited in the independent claims is not so limited because dependent claims, such as claims 5, 11, and 17, recite that the offline payment-operated machine is not connected to any networks. *See, e.g.,* Ex. 1002, 47:60–62; *Alcon Research, LTD. v. Apotex Inc.*, 687 F.3d 1362, 1367 (Fed. Cir. 2012) ("Under the doctrine of claim differentiation, dependent claims are presumed to be of narrower scope than the independent claims from which they depend."); *Intamin, Ltd. v. Magnetar Techs., Corp.*, 483 F.3d 1328, 1335 (Fed. Cir. 2007) ("An independent claim impliedly embraces more subject matter than its narrower dependent claim."); *SRI Int'l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1122 (Fed. Cir. 1985) ("It is settled law that when a patent claim does not contain a certain limitation and another claim does, that limitation cannot be read into the former claim in determining either validity or infringement.").

Accordingly, we do not adopt Petitioner's proposed construction of "offline payment-operated machine" and, in particular, do not construe "offline payment-operated machine" to require a machine that is not connected to any network.

D. *Principles of Law*

To prevail on its challenges, Petitioner must demonstrate by a preponderance of the evidence that the claims are unpatentable. 35 U. S.C. § 326(e); 37 C.F.R. § 42.1(d). "[T]he petitioner has the burden from the onset to show with particularity why the patent it challenges is

unpatentable." *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC. v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

E. *§ 112 Lack of Written Description – Claims 19 and 20*

Claim 19 recites a payment module comprising:

> [(a)] a first interface module configured to communicate with a control unit of the offline payment-operated machine using a serial interface to send one or more commands to the control unit; [and]
>
> [(b)] a *second* interface module configured to count one or more electrical pulses generated by the coin receiving switch of the offline payment-operated machine in response to the insertion of a single coin of a predetermined type in the offline payment-operated machine.

Ex. 1002, 50:7–21 (labeling and emphasis added).

Petitioner asserts that the specification of the '608 patent lacks written description for limitation (b) because "it is only the 'first interface module' [1522] that is mentioned as counting one or more electrical pulses generated by the coin receiving switch" and the specification "does not hint, much less describe, the second interface module 1524 being capable of counting the electrical pulses from the coin receiving switch." Pet. 32–33. In other words, claim 19 labels as the *second* interface module what the specification of the '608 patent labels as the *first* interface module, and vice versa.

Patent Owner responds that claim 19 as originally filed and the remainder of the specification provides adequate written description support. Prelim. Resp. 19–22. Patent Owner argues: "Petitioners never explain why the as-filed claim, in view of the additional disclosure in the specification regarding the claimed components and the claimed configuration, is

insufficient to reasonably convey to a POSA that the inventors were in possession of claims 19–20." *Id.* at 21.

Under 35 U.S.C. § 112(a), "[t]he specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same . . . ." To satisfy the written description requirement, the disclosure must reasonably convey to skilled artisans that the patentee possessed the claimed invention as of the filing date. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (*en banc*). The requirement under § 112 does not demand that the specification recite the claimed invention *verbatim*. *Id.* at 1352 (citations omitted). The "claimed subject matter need not be described *in haec verba* in the specification in order for that specification to satisfy the description requirement." *In re Smith*, 481 F.2d 910, 914 (CCPA 1973). "Original claims are part of the original specification and in many cases will satisfy the written description requirement." *Mentor Graphics Corp. v. EVE-USA, Inc.*, 851 F.3d 1275, 1297 (Fed. Cir. 2017).

We agree with Patent Owner. Petitioner, itself, indicates that the specification of the '608 patent discloses an interface module counting the electrical pulses generated by a coin receiving switch. The Petition states: "Specifically, the objective inquiry reveals that it is only the 'first interface module' that is mentioned as counting one or more electrical pulses generated by the coin receiving switch." Pet. 32; *see also* Ex. 1005 ¶ 125 (corresponding testimony of Mr. Smith).

> In this regard, the '608 patent states:
>
> In FIG. 28A, the first interface module 1522 is configured to sample payment acceptance signals from the microswitch 1502 (e.g., a coin receiving switch) via lead 1532 of the offline-payment operated machine 1500. For example, the payment acceptance signals are indicative of a coin being received by the microswitch 1502 which depress lever 1504.

Ex. 1002, 40:35–40. The '608 patent also describes FIG. 28B as illustrating signals sampled by the first interface module 1522, "[f]or example, the preset sequence of payment acceptance signals indicative of the preset number of coins include pulses (i.e., payment acceptance signals) 1552, 1554, 1556, and 1558." *Id.* at 40:50–58; *see also id.* at 41:59–42:4 ("payment acceptance signals are indicative of a preset number of coins received by the coin receiving switch"); 42:49–55 (describing identifying a count of pulses). The '608 patent further states: "[T]he terms used for labels (e.g., 'first,' 'second,' and 'third') are meant solely for purposes of designation and not for order or limitation." *Id.* at 46:11–14. Claim 19, as originally filed, recited limitation (b), with the coin counting interface module being labeled as the second interface module. Ex. 1003, 283.

Given the originally filed claim 19 and the above disclosures of the '608 patent, Petitioner does not persuade us that the '608 patent does not reasonably convey to skilled artisans that the patentee did not possess the claimed invention as of the filing date. Petitioner does not show sufficiently that claims 19–20 are more likely than not unpatentable under 35 U.S.C. § 112(a) for lack of written description.

F. *§ 112 Indefiniteness – Claims 1–20*

Petitioner asserts that claims 1–20 are unpatentable under 35 U.S.C. § 112(b) for indefiniteness. Pet. 34. In particular, Petitioner argues that the

following limitations fail to inform a POSITA about the scope of the claimed invention with reasonable certainty:

> "a first interface module configured to output to a control unit . . . one or more electrical pulses" (claims 1, 7, and 13);
>
> "a first interface module configured to communicate with a control unit . . . using a serial interface . . . " (claim 19);
>
> "a second interface module configured to store [or sample] control signals from the control unit" (claims 4, 10, and 16);
>
> "a second interface module configured to count one or more electrical pulses . . . and to store an output of the control unit" (claim 19); and
>
> "the offline payment-operated machine is not connected to any networks" (claims 5, 11, and 17).

Pet. 34–35, 40.

Patent claims must "particularly point[] out and distinctly claim[] the subject matter which the inventor or a joint inventor regards as the invention." 35 U.S.C. § 112(b). "[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014); *see* USPTO Memorandum on the Approach to Indefiniteness Under 35 U.S.C. § 112 in AIA Post-Grant Proceedings (Jan. 6, 2021).[6]

[6] Available at https://www.uspto.gov/sites/default/files/documents/IndefinitenessMemo.pdf.

1. Interface Module Terms – Claims 1–20

Petitioner asserts that 35 U.S.C. § 112(f) applies to each of these limitations:

> "a first interface module configured to output to a control unit . . . one or more electrical pulses" (claims 1, 7, and 13);
>
> "a first interface module configured to communicate with a control unit . . . using a serial interface . . . " (claim 19);
>
> "a second interface module configured to store [or sample] control signals from the control unit" (claims 4, 10, and 16); and
>
> "a second interface module configured to count one or more electrical pulses . . . and to store an output of the control unit" (claim 19).

Pet. 35–45. In particular, Petitioner argues that "interface module" does not connote sufficiently definite structure and that a POSITA would understand this to be a nonce term. *See, e.g., id.* at 37–39 (citing Ex. 1005 ¶¶ 130–131).[7]

Patent Owner disagrees and argues that "interface module" "connotes sufficient structure to avoid means-plus-function construction because it [] denotes a type of device with a generally understood meaning in the mechanical arts." Prelim. Resp. 24.

Means-plus-function claiming occurs when a claim term is drafted in a manner that invokes 35 U.S.C. § 112(f), which states:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such

[7] As Petitioner's analysis for these terms is substantially similar, we cite to Petitioner's analysis concerning "a first interface module" as recited by claims 1, 7, and 13 as representative. *See* Pet. 40–45.

> claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The failure to use the term "means" in a claim element creates a rebuttable presumption that § 112(f) does not apply, but does not automatically prevent that element from being construed as a means-plus-function element. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc). In such a case, § 112(f) will apply if the claim term fails to recite sufficiently definite structure, or else recites a function without reciting sufficient structure for performing that function. *Williamson*, 792 F.3d at 1349. "The standard is whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure." *Williamson,* 792 F.3d at 1349. Claim language does not invoke a § 112(f) construction if persons of ordinary skill in the art reading the specification would understand the term to be the name for a structure that performs the function, even when the term covers a broad class of structures or identifies the structures by their function. *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996) ("Many devices take their names from the functions they perform.").

We agree with Patent Owner that Petitioner has not sufficiently rebutted the presumption that § 112(f) does not apply. Petitioner relies upon Mr. Smith's testimony to support its assertion that "interface module" is a nonce word. *See* Pet. 37–39 (citing Ex. 1005 ¶¶ 130–131). However, Mr. Smith's testimony that "interface module" does not connote sufficiently definite structure and that a POSITA would understand this to be a nonce

term is conclusory and unsupported. *See* Ex. 1005 ¶¶ 130–131. This testimony is also inconsistent with other testimony.

Specifically, Mr. Smith also testifies that "a POSITA would understand the term 'interface' to mean: a place at which two or more systems connect to facilitate communication" (Ex. 1005 ¶ 73 (emphasis omitted) and that

> [t]he plain and customary definition of "interface," in my opinion, would be understood by a POSITA to be consistent with that provided by the Meriam-Webster online dictionary, namely *"the place at which independent and often unrelated systems meet and act on or communicate with each other."*

Id. ¶ 75 (citing Ex. 1021, 2); *see also* Prelim. Resp. 24 (citing, *e.g.*, *High Point Sarl v. Sprint Nextel Corp.*, No. 09-02269-CM, 2012 U.S. Dist. LEXIS 108485, at *15 (D. Kan. Aug. 3, 2012) ("'module' and 'interface' . . . have a well-known meaning to those of skill in the art." (citing IEEE Dictionary ("interface") (5th ed. 1993) (defining "interface" as "a hardware or software component that connects two or more components for the purpose of passing from one to the other)). This definition of "interface" is consistent with the '608 patent's description of an industry standard multi-drop bus (MDB) which connects two or more systems to facilitate communications. Ex. 1002, 6:1–29, 15:56–16:22. The Petition, itself, explains that the MDB "was developed as an interface to handle communications between electronic components in automated vending machines" and that the "MDB protocol served as an interface between various electronic components." Pet. 22; *see also* Ex. 1005 ¶¶ 44, 48.

Given the above, we are not persuaded by Petitioner that "interface module" does not connote sufficiently definite structure and that a POSITA would understand this to be a nonce term. Thus, we are not persuaded that

Petitioner has sufficiently rebutted the presumption that §112(f) does not apply. Accordingly, we determine that Petitioner does not show sufficiently that claims 1–20 are more likely than not unpatentable under 35 U.S.C. § 112(b) for being indefinite with respect to the "interface module."

2. "the offline payment-operated machine is not connected to any networks"– Claims 5, 11, and 17

Claims 5, 11, and 17 are dependent from claims 1, 7, and 13, respectively, and each recites "wherein the offline payment-operated machine is not connected to any networks." Ex. 1002, 47:60–62, 48:58–59, 50:1–3. Applying its proposed construction of "offline payment-operated machine," Petitioner asserts that "a POSITA would not be able to ascertain, with any degree of reasonable certainty, the scope of the alleged invention of claims 5, 11, or 17" because

> the requirement that the machine not be connected to any networks, as specified in these dependent claims, suggests to a POSITA that "the offline payment-operated machine" recited in the independent claims 1, 7, and 13 can be connected to a network, which is contrary to the plain and customary meaning of "offline," as understood by a POSITA.

Pet. 45–46.

Patent Owner responds, "[b]ecause Petitioners' indefiniteness challenge to claims 5, 11, and 17 is premised on [its] misconstruction of the claim, Petitioners have failed to satisfy their burden to demonstrate indefiniteness of these claims." Prelim. Resp. 30.

We agree with Patent Owner. Petitioner's contention is based upon its proposed construction of "offline payment-operated machine," which above we do not adopt. Petitioner does not show sufficiently that claims 5, 11, and 17 are more likely than not unpatentable under 35 U.S.C. § 112(b) for being indefinite.

G. *Failure to Further Limit*

Under 35 U.S.C. § 112(d), "a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed." Claims 5, 11, and 17 are dependent from claims 1, 7, and 13, respectively, and each recites "wherein the offline payment-operated machine is not connected to any networks." Ex. 1002, 47:60–62, 48:58–59, 50:1–3.

Petitioner contends that dependent claims 5, 11, and 17 fail to narrow the claims from which they depend because "[e]ach of independent claims 1, 7, and 13 specifies the 'payment-operated machine' is offline" when payment-operated machine is given Petitioner's proposed construction. Pet. 46–47 (emphasis omitted). Petitioner's proposed construction requires that the offline payment-operated machine is not connected to any networks. *Id.* at 17, 46–47. Patent Owner responds that Petitioner's proposed construction is incorrect and "that the machine has an offline payment capability does not exclude the machine from also having a connection to a network." Prelim. Resp. 30–31. We agree with Patent Owner. Petitioner's contention is based upon its proposed construction of "offline payment-operated machine," which above we do not adopt. Petitioner does not show sufficiently that claims 5, 11, and 17 are more likely than not unpatentable under 35 U.S.C. § 112(d) for failing to further limit the claim from which they depend.

H. *Breitenbach Grounds*

1. Overview of Breitenbach

Breitenbach is titled "Machine Retrofits and Interactive Soda Fountains" and published on July 18, 2015, from an application filed on January 11, 2011. Ex. 1007, codes (22), (45), (54).

Breitenbach describes coupling a conventional vending machine to a retrofit device to enhance services. *Id.* at 2:15–24. Figure 1 of Breitenbach is reproduced below.

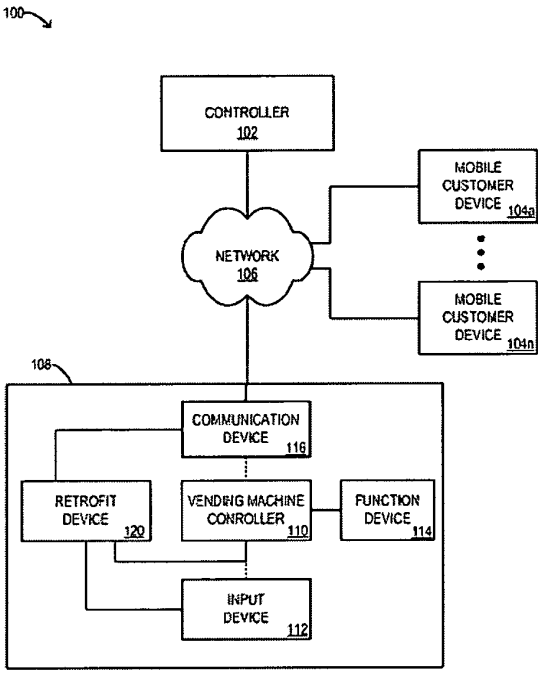


FIG. 1

Figure 1 depicts a block diagram of an embodiment of Breitenbach's system. *Id.* at 1:58–59; 4:11–12. The system includes controller 102 communicating with mobile customer devices 104a–n via network 106 and machine 108. *Id.* at 4:11–16. Machine 108 may be a vending machine having input device 112, function device 114, communication device 116, and vending machine controller 110. *Id.* at 4:16–19. Machine 108 may include retrofit device 120. *Id.* at 4:26–27.

Figure 2 of Breitenbach is reproduced below.

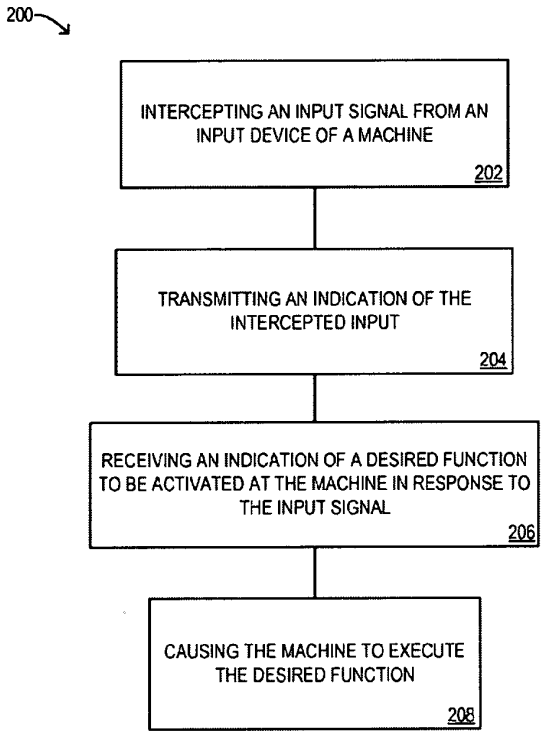


Figure 2 depicts a flow diagram of method 200. *Id.* at 7:37–38. For step 204 ("transmitting an indication of the intercepted input"), Breitenbach describes retrofit device 120 sending a signal indicative of a customer's input device or system, such as controller 102. *Id.* at 8:14–21. Breitenbach describes in conjunction with step 206 ("receiving an indication of a desired function to be activated at the machine in response to the input signal"), that "[s]pecially-programmed instructions stored and/or executed by the controller [102] may, for example, be executed to determine an appropriate action to be taken at the machine [108] in response to the customer's input." *Id.* at 8:30–32, 8:35–38. With respect to step 208 ("causing the machine to execute the desired function"), Breitenbach states:

> The retrofit device may, based on the received indication of the desired function for example, send a signal to the machine (e.g.,

> to the VMC 110 and/or the function device 114 of FIG. 1) that causes the machine to undertake the desired function. In the case that the desired function is the dispensing and/or providing of a unit of product, for example, the retrofit device may transmit a signal that causes the machine to dispense the desired unit of product—such as by sending a signal indicative of payment to a payment acceptance device of the machine. The retrofit device may, in some embodiments, "fool" the machine by replicating a "coin-in" signal indicative of the proper payment amount for the desired unit of product, causing the machine to dispense the unit of product.

Id. at 8:49–62.

2. Anticipation by Breitenbach — Claims 1–20

A claim is anticipated under § 102 "only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). "Inherent anticipation requires that the missing descriptive material is 'necessarily present,' not merely probably or possibly present, in the prior art." *Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1295 (Fed. Cir. 2002) (quoting *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999)); *see also Allergan, Inc. v. Apotex Inc.*, 754 F.3d 952, 958 (Fed. Cir. 2014).

a) Independent Claim 1

Petitioner contends that Breitenbach anticipates claim 1. Pet. 47–65. In particular, Petitioner contends that Breitenbach inherently describes claim limitation 1.4b, which requires a program including instructions for "storing, in the memory of the payment module, a number of the electrical pulses that must be received by the control unit to initiate an operation of the offline payment operating machine." Pet. 60; Ex. 1002, 47:9–15. For claim limitation 1.4b, the Petition states:

> Breitenbach inherently stores in the memory of the retrofit device (120/320/420/520/720) the number of electrical pulses needed to "fool" the VMC (110/410/510/910) into determining the coin-acceptance mechanism received the appropriate number of coins for operation. EX1005, ¶¶184-185. The retrofit device does this "by replicating a 'coin-in' signal indicative of the proper payment amount for the desired unit of product, causing the machine to dispense the unit of product." *Id.*, 8:47-62; EX1005, ¶¶ 185-186. In order to replicate the "coin-in" signal, the retrofit device inherently stores and determines the number of electrical pulses needed by the VMC to initiate an operation of the coin-operated machine (108/708). *Id.*

Pet. 60; *see also* Pet. 51–52; Ex. 1005 ¶¶ 110–111, 184–186 (substantively similar testimony of Mr. Smith).

Patent Owner disagrees and argues that "the retrofit device that Breitenbach discloses does not ***necessarily*** store, in the memory ***of the retrofit device***, a number of electrical pulses that must be received by a control unit to initiate an operation of the machine." Prelim. Resp. 32. Patent Owner contends that Petitioner ignores that Breitenbach describes that machine 108 is connected to controller 102 through network 106 and storing operation instructions remote from the machine at controller 102. *Id.* at 32–33 (citing Ex. 1007, 4:11–54, 5:9–46, 6:51–61, 17:48–18:46, Fig. 1, Fig. 7).

We agree with Patent Owner. As acknowledged by Petitioner, Breitenbach does not explicitly describe "the particular structure included in the retrofit device to generate and output the 'coin-in' signals to the VMC to 'fool' the machine into detecting proper payment for a machine operation." Pet. 99; *see generally* Ex. 1007. Breitenbach does state that

> [t]he retrofit device may, in somc embodiments, "fool" the machine by replicating a "coin-in" signal indicative of the proper payment amount for the desired unit of product, causing the

machine to dispense the unit of product.

Ex. 1007, 8:58–62. But, Petitioner does not sufficiently explain why this necessarily means that "[i]n order to replicate the 'coin-in' signal, the retrofit device inherently stores and determines the number of electrical pulses" (Pet. 60). Mr. Smith's testimony is similarly conclusory and does not sufficiently support Petitioner's theory of inherency. Ex. 1005 ¶¶ 110–111, 185–186. Further as Patent Owner points out (Prelim. Resp. 32–33), Petitioner's analysis does not sufficiently account for Breitenbach's descriptions of storing operation instructions remote from machine 108 at controller 102. *See, e.g.,* Ex. 1007, 6:51–61, 8:35–38 ("Specially-programmed instructions stored and/or executed by the controller [102] may, for example, be executed to determine an appropriate action to be taken at the machine [108] in response to the customer's input."),

Accordingly, we determine that Petitioner does not show sufficiently that claim 1 is more likely than not unpatentable under 35 U.S.C. § 102 as being anticipated by Breitenbach.

b) Independent Claims 7, 13, and 19

Independent claims 7, 13, and 19 recite limitations similar to limitation 1.4b. Ex. 1002, 48:12–15, 49:17–20, 50:28–31. Petitioner merely references its analysis of claim 1 to show that Breitenbach anticipates claims 7, 13, and 19 and does not provide any additional explanation. Pet. 74–75 (claim 7), 83 (claim 13), 92 (claim 19). For the same reasons as discussed above with respect to limitation 1.4b, Petitioner does not show sufficiently that claims 7, 13, and 19 are more likely than not anticipated by Breitenbach.

c) Dependent Claims

Claims 2–6 depend from claim 1. Claims 8–12 depend from claim 7. Claims 14–18 depend from claim 13. Claim 20 depends from claim 19.

For the same reasons as discussed above with respect to limitation 1.4b, Petitioner does not sufficiently show that claims 2–6, 8–12, 14–18, and 20 are more likely than not anticipated by Breitenbach.

3. Obviousness over Breitenbach and Yung — Claims 1–20

Petitioner does not rely upon Yung to cure the above deficiency of Breitenbach. *See* Pet. 104 (mapping limitation 1.4b by reference to the Petition's anticipation ground). Accordingly, we determine that Petitioner does not sufficiently show that claims 1–20 are more likely than not unpatentable under 35 U.S.C. § 103 over Breitenbach and Yung.

4. Obviousness over Breitenbach and Cole — Claims 1–20

Petitioner does not rely upon Cole to cure the above deficiency of Breitenbach. Pet. 112 (mapping limitation 1.4b by reference to the Petition's anticipation ground). Accordingly, we determine that Petitioner does not sufficiently show that claims 1–20 are more likely than not unpatentable under 35 U.S.C. § 103 over Breitenbach and Cole.

III. CONCLUSION

For the foregoing reasons, we conclude that the information presented in the Petition fails to establish that it is more likely than not that at least one claim of the '608 patent is unpatentable. Accordingly, we do not institute post-grant review of the '608 patent.

IV. ORDER

It is ORDERED that the Petition is denied, and we do not institute post-grant review of any claim of the '608 patent based on the grounds asserted in this Petition.

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AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court District of Delaware on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
	4/19/2022	District of Delaware

PLAINTIFF	DEFENDANT
PAYRANGE INC.	CSC SERVICEWORKS, INC., and CSC SERVICEWORKS HOLDINGS, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	8,856,045	10/7/2014	PAYRANGE INC.
2	10,438,208	10/8/2019	PAYRANGE INC.
3	10,891,608	1/21/2021	PAYRANGE INC.
4			
5			

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court District of Delaware on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
22-502-VAC	4/19/2022	District of Delaware

PLAINTIFF	DEFENDANT
PAYRANGE INC.	CSC SERVICEWORKS, INC., and CSC SERVICEWORKS HOLDINGS, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1			
2			
3			
4			
5			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
See attached

CLERK	(BY) DEPUTY CLERK	DATE
John A. Cerino		8-23-2022

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

PAYRANGE INC.,	)	
Plaintiff	)	
v.	)	C.A. No. 22-502 (VAC)
CSC SERVICEWORKS, INC., and CSC SERVICEWORKS HOLDINGS, INC.,	)	
Defendant.	)	

NOTICE OF VOLUNTARY DISMISSAL WITHOUT PREJUDICE

Pursuant to Fed. R. Civ. P. 41(a)(1)(A)(i), Plaintiff PayRange Inc. hereby dismisses this action without prejudice, with each party bearing their own costs and fees. Defendants CSC ServiceWorks, Inc. and CSC ServiceWorks Holdings, Inc. have not served an answer or a motion for summary judgment.

WILSON SONSINI GOODRICH & ROSATI, P.C.

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August 23, 2022