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(54) **METHOD AND DEVICE FOR
RETROFITTING AN OFFLINE-PAYMENT
OPERATED MACHINE TO ACCEPT
ELECTRONIC PAYMENTS**

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(58) **Field of Classification Search**
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(56) **References Cited**

U.S. PATENT DOCUMENTS

5,844,808 A 12/1998 Konsmo et al.
5,892,900 A 4/1999 Ginter et al.

(Continued)

FOREIGN PATENT DOCUMENTS

W● W●2008/083022 A1 7/2008
W● W●2008/083025 A2 7/2008

(Continued)

OTHER PUBLICATIONS

Bing, Bing Images Search: "dongle", <http://www.bing.com/images/search?q=dongleForm+HDRSC2>, Dec. 5, 2013, 2 pgs.

(Continued)

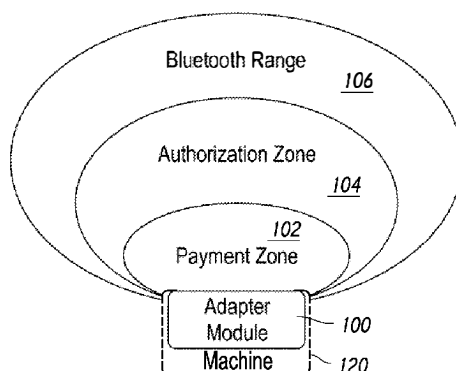
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(57) **ABSTRACT**

A payment module includes: one or more processors, memory, a first interface module configured to couple the payment module with a control unit of an offline-payment operated machine, and a short-range communication capability for communicating with one or more mobile devices each including a complimentary short-range communication capability and a long-range communication capability. The payment module receives a transaction request via the short-range communication capability from a mobile device to perform a transaction with the offline-payment operated machine. The payment module validates the transaction request to verify that the mobile device is authorized to initiate payment for the transaction by a remote server via the long-range communication capability. In accordance with a determination that the transaction request is valid, the payment module causes the offline-payment operated machine to perform the requested transaction by issuing a signal, via the first interface module, to the control unit to perform the transaction.

20 Claims, 44 Drawing Sheets



(51)	Int. Cl.			2008/0167991	A1	7/2008	Carlson et al.
	G06Q 20/40	(2012.01)		2008/0183480	A1	7/2008	Carlson et al.
	G06Q 20/38	(2012.01)		2008/0201226	A1	8/2008	Carlson et al.
	G06Q 20/36	(2012.01)		2008/0208762	A1	8/2008	Arthur et al.
	G06Q 30/06	(2012.01)		2008/0255947	A1	10/2008	Friedman
(52)	U.S. Cl.			2009/0037284	A1	2/2009	Lewis et al.
	CPC	G06Q 20/327 (2013.01); G06Q 20/3278		2009/0099961	A1	4/2009	Ogilvy
	(2013.01); G06Q 20/36 (2013.01); G06Q 20/38			2009/0119190	A1	5/2009	Realini
	(2013.01); G06Q 20/3829 (2013.01); G06Q			2009/0171682	A1	7/2009	Dixon et al.
	30/06 (2013.01); G06Q 20/3823 (2013.01)			2009/0306818	A1	12/2009	Slagley et al.
(56)	References Cited			2009/0313132	A1	12/2009	McKenna et al.
	U.S. PATENT DOCUMENTS			2009/0327089	A1	12/2009	Kanno et al.
	D412,154 S	7/1999	Lok	2010/0094456	A1	4/2010	Simpkins et al.
	D416,230 S	11/1999	Narumo et al.	2011/0040686	A1	2/2011	Carlson
	D461,476 S	8/2002	Evers et al.	2011/0153436	A1	6/2011	Krampe
6,462,644 B1	10/2002	Howell et al.	2011/0153442	A1	6/2011	Krampe	
D474,154 S	5/2003	Lai	2011/0251910	A1	10/2011	Dimmick	
6,584,309 B1	6/2003	Whigham	2011/0276636	A1	11/2011	Cheng et al.	
6,793,134 B2 *	9/2004	Clark	2012/0011024	A1	1/2012	Dorsey et al.	
D519,465 S	4/2006	Sirichai et al.	2012/0016731	A1	1/2012	Smith et al.	
7,085,556 B2	8/2006	Offer	2012/0029691	A1	2/2012	Mockus et al.	
7,127,236 B2	10/2006	Khan et al.	2012/0036045	A1	2/2012	Lowe et al.	
D547,761 S	7/2007	Hui	2012/0078735	A1	3/2012	Bauer et al.	
7,455,223 B1	11/2008	Wilson et al.	2012/0158172	A1	6/2012	Wencslao	
7,464,867 B1	12/2008	Kolls	2012/0197740	A1	8/2012	Grigg et al.	
D601,142 S	9/2009	Lindley	2012/0231844	A1	9/2012	Coppinger	
7,721,958 B2	5/2010	Belfer et al.	2012/0246074	A1	9/2012	Annamalai et al.	
7,848,980 B2	12/2010	Carlson	2012/0276845	A1	11/2012	Wikander	
D669,899 S	10/2012	Cheng	2012/0290472	A1	11/2012	Mullen et al.	
8,346,670 B2	1/2013	Hasson et al.	2012/0303528	A1	11/2012	Weiner et al.	
8,356,754 B2	1/2013	Johnson et al.	2012/0316963	A1	12/2012	Moshfeghi	
8,376,227 B2	2/2013	Hammad et al.	2013/0030931	A1	1/2013	Moshfeghi	
8,396,589 B2	3/2013	Katzenstein Garibaldi et al.	2013/0054395	A1	2/2013	Cyr et al.	
8,412,626 B2	4/2013	Hirson et al.	2013/0085835	A1	4/2013	Horowitz	
8,438,066 B1	5/2013	Yuen	2013/0110296	A1	5/2013	Khoo	
8,479,190 B2	7/2013	Sueyoshi et al.	2013/0117738	A1	5/2013	Livingston et al.	
8,489,140 B2	7/2013	Weiner et al.	2013/0124289	A1	5/2013	Fisher	
8,517,766 B2	8/2013	Golko et al.	2013/0143498	A1	6/2013	Niemi	
D691,140 S	10/2013	Huang	2013/0166448	A1	6/2013	Narayanan	
8,548,426 B2	10/2013	Smith	2013/0185150	A1	7/2013	Crum	
8,583,496 B2	11/2013	Yoo et al.	2013/0217333	A1	8/2013	Sprigg et al.	
8,596,528 B2	12/2013	Fernandes et al.	2013/0246171	A1	9/2013	Carapelli	
8,600,899 B1	12/2013	Davis	2013/0246364	A1	9/2013	Bhavith	
8,615,445 B2	12/2013	Dorsey et al.	2013/0267121	A1	10/2013	Hsu	
8,645,971 B2	2/2014	Carlson et al.	2013/0267176	A1	10/2013	Hertel et al.	
8,700,530 B2	4/2014	Smith	2013/0278622	A1	10/2013	Sun et al.	
8,707,276 B2	4/2014	Hill et al.	2013/0297422	A1	11/2013	Hunter et al.	
D707,234 S	6/2014	Tan	2013/0311379	A1	11/2013	Smith	
8,769,643 B1	7/2014	Ben Ayed	2013/0311382	A1	11/2013	Fosmark et al.	
8,810,430 B2	8/2014	Proud	2013/0332293	A1	12/2013	Ran	
8,819,659 B2	8/2014	Ramer et al.	2014/0019367	A1	1/2014	Khan et al.	
8,838,481 B2	9/2014	Moshfeghi	2014/0040028	A1	2/2014	King et al.	
8,850,421 B2	9/2014	Proud	2014/0040117	A1	2/2014	Jain	
8,856,045 B1	10/2014	Patel et al.	2014/0064116	A1	3/2014	Linde et al.	
D717,747 S	11/2014	Nishimoto et al.	2014/0074714	A1	3/2014	Melone et al.	
8,898,620 B2	11/2014	Eizenman et al.	2014/0074723	A1	3/2014	Kamat	
D721,374 S	1/2015	Liu	2014/0100977	A1	4/2014	Davis	
9,037,492 B2	5/2015	White	2014/0122298	A1	5/2014	Oyer	
D730,904 S	6/2015	Liu	2014/0136301	A1	5/2014	Valdes	
2002/0164953 A1 *	11/2002	Curtis	2014/0136411 A1 *	5/2014	Cho	G06F 21/35 705/44	
2003/0110097 A1	6/2003	Lei	2014/0180852	A1	6/2014	Kamat	
2003/0158891 A1 *	8/2003	Lei et al.	2014/0201066	A1	7/2014	Roux et al.	
2004/0049454 A1	3/2004	Kanno et al.	2014/0249995	A1	9/2014	Ogilvy	
2004/0117262 A1	6/2004	Berger et al.	2014/0279101	A1	9/2014	Duplan et al.	
2005/0101295 A1	5/2005	Rupp	2014/0317611	A1	10/2014	Wojcik et al.	
2005/0181804 A1	8/2005	Misikangas et al.	2014/0361872 A1 *	12/2014	Garcia et al.	340/5.74	
2005/0232421 A1	10/2005	Simons et al.	2014/0378057	A1	12/2014	Ramon et al.	
2007/0050083 A1	3/2007	Signorelli et al.	2015/0073980	A1	3/2015	Griffin et al.	
2007/0187491 A1	8/2007	Godwin et al.	2015/0081462	A1	3/2015	Ozvat et al.	
2008/0033880 A1	2/2008	Fiebiger et al.	2015/0105901	A1	4/2015	Joshi et al.	
2008/0126213 A1	5/2008	Robertson et al.	2015/0149992	A1	5/2015	Wade et al.	
2008/0141033 A1	6/2008	Ginter et al.	2015/0154579	A1	6/2015	Teicher	
FOREIGN PATENT DOCUMENTS							
WO WO2008/083078 A2 7/2008							

(56)

References Cited

FOREIGN PATENT DOCUMENTS

WO	WO2008/083115	A1	7/2008
WO	WO2008/083119	A1	7/2008
WO	WO 2013/132995	A1	9/2013
WO	WO2013/177416	A2	11/2013

OTHER PUBLICATIONS

Google, Chromecast, <http://www.google.com/intl/devices/chromecast/>, Dec. 12, 2013, 4 pgs.

Madlmayr et al., "Near Field Communication Based Mobile Payment System," Austrian Research Funding Agency, Project 811408, Mar. 6, 2008, 13 pgs.

Patel, Office Action U.S. Appl. No. 14/321,733, dated Aug. 21, 2014, 9 pgs.

Patel, Office Action U.S. Appl. No. 14/320,534, dated Oct. 29, 2014, 18 pgs.

Patel, Final Office Action U.S. Appl. No. 14/321,733, dated Nov. 14, 2014, 11 pgs.

Patel, Office Action U.S. Appl. No. 14/335,762, dated Dec. 10, 2014, 7 pgs.

Patel, Office Action U.S. Appl. No. 14/321,717, dated Dec. 19, 2014, 16 pgs.

Patel, Office Action U.S. Appl. No. 14/458,199, dated Jan. 5, 2015, 7 pgs.

U.S. Appl. No. 60/871,898, Value Based Offers, inventor Mark Carlson, filed Dec. 26, 2006. US Patent and Trademark Office, 169 pgs.

Balan et al., "mFerio: the design and evaluation of a peer-to-peer mobile payment system", Jun. 2009, 14 pgs.

Balfe et al., "e-EMV: emulating EMV for internet payments with trusted computing Technologies", Oct. 2008, 12 pgs.

Patel, Notice of Allowance, U.S. Appl. No. 14/321,733, dated Feb. 27, 2015, 9 pgs.

Patel, Office Action U.S. Appl. No. 14/456,192, dated Jan. 30, 2015, 24 pgs.

PayRange, Inc., International Search Report and Written Opinion, PCT/US2014/071284, Mar. 25, 2015, 9 pgs.

Kadambi et al., Near-Field Communication-based Secure Mobile Payment Service, Aug. 2009, 10 pgs.

Patel, Final Office Action U.S. Appl. No. 14/320,534, dated Apr. 16, 2015, 21 pgs.

Patel, Final Office Action U.S. Appl. No. 14/321,717, dated Jun. 18, 2015, 22 pgs.

Patel, Final Office Action U.S. Appl. No. 14/458,199, dated Jun. 24, 2015, 8 pgs.

Patel, Office Action U.S. Appl. No. 14/321,724, dated May 15, 2015, 19 pgs.

Patel, Office Action U.S. Appl. No. 14/641,236, dated May 29, 2015, 10 pgs.

Patel, Office Action U.S. Appl. No. 14/614,336, dated May 27, 2015, 17 pgs.

Patel, Office Action U.S. Appl. No. 29/477,025, dated Aug. 14, 2015, 5 pgs.

Patel, Office Action U.S. Appl. No. 14/335,762, dated Sep. 18, 2015, 13 pgs.

Patel, Final Office Action U.S. Appl. No. 14/458,192, dated Sep. 16, 2015, 22 pgs.

Patel, Final Office Action U.S. Appl. No. 14/321,724, dated Oct. 8, 2015, 19 pgs.

* cited by examiner

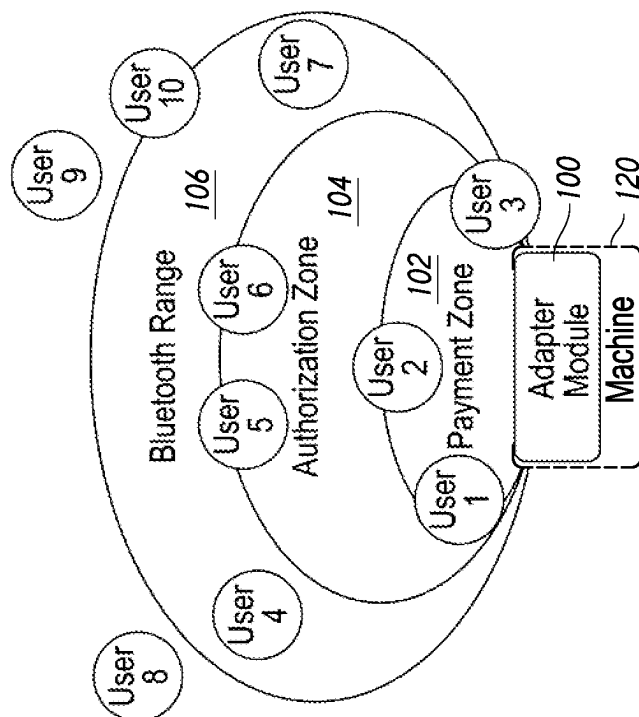


FIG. 2

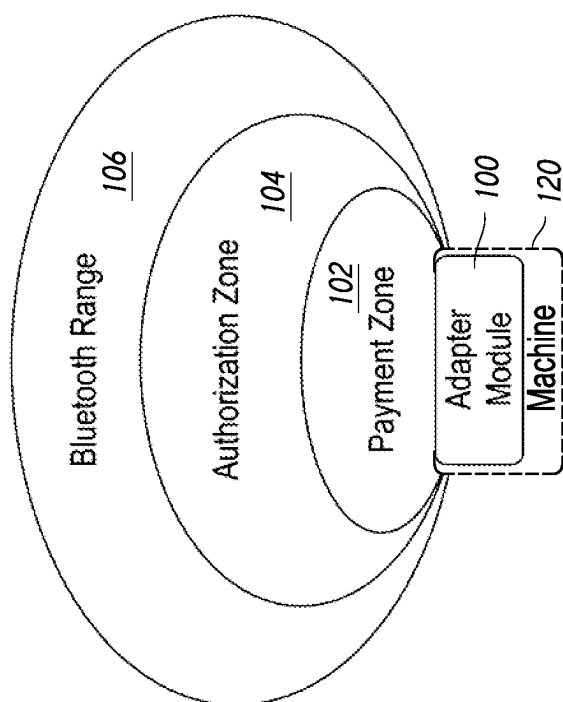


FIG. 1

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 transaction 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.

FIG. 3

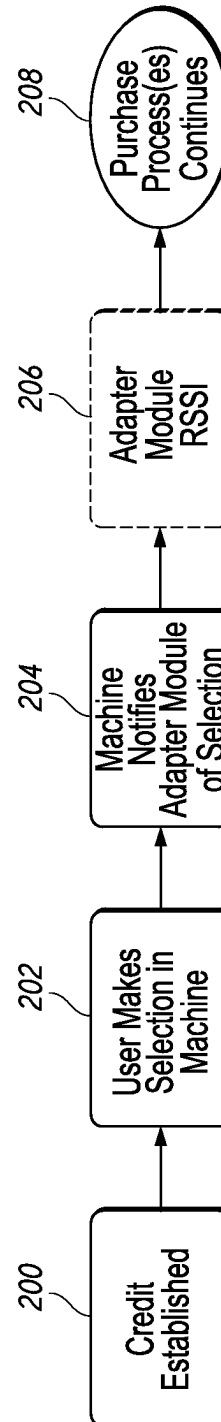


FIG. 4

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