

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CSC SERVICEWORKS, INC.,
Petitioner,

v.

PAYRANGE, INC.,
Patent Owner.

IPR2023-01188
U.S. Patent No. 10,891,608

**PETITION FOR *INTER PARTES* REVIEW
UNDER 35 U.S.C. § 312 AND 37 C.F.R. § 42.104**

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PETITIONER’S EXHIBIT LIST

Ex. 1001	U.S. Patent No. 10,891,608
Ex. 1002	Prosecution History of U.S. Patent No. 10,891,608
Ex. 1003	[Declaration]
Ex. 1004	U.S. Patent Publication No. 2010/0227671A1 to Laaroussi et al. (“Laaroussi”)
Ex. 1005	U.S. Patent No. 4,374,557 to Sugimoto et al. (“Sugimoto”)
Ex. 1006	U.S. Patent No. 10,121,318 to LeMay et al. (“LeMay”)
Ex. 1007	U.S. Patent No. 6,840,860 to Okuniewicz (“Okuniewicz”)
Ex. 1008	Reserved
Ex. 1009	Reserved
Ex. 1010	Waiver of Service of Complaint (July 18, 2022)
Ex. 1011	Specification of the Bluetooth System, Version 1.2 (November 5, 2003)
Ex. 1012	Specification for RFID Air Interface, Version 1.2.0 (October 23, 2008)
Ex. 1013	Curriculum Vitae of Dr. Clifford Neuman

I. INTRODUCTION

CSC ServiceWorks, Inc. (“Petitioner” or “CSC”) respectfully requests the Board institute *inter partes* review of and cancel claims 1-2, 4-8, 10-14, 16-20 (“the Challenged Claims”) of U.S. Patent No. 10,891,608 (“the ‘608 patent,” Ex.1001).

II. GROUNDS FOR STANDING

Petitioner certifies that the ‘608 patent is eligible for IPR and that Petitioner is not barred or estopped from requesting IPR challenging the patent claims. 37 C.F.R. § 42.104(a). This petition is timely because Petitioner first filed a waiver of service of a complaint asserting the ‘608 patent on July 18, 2022, which means Petitioner was served with a complaint alleging infringement of the ‘608 patent not more than one year ago. Ex.1010; FRCP 4(d)(4) (complaint is deemed “served at the time of filing the waiver”); *see also Brinkmann Corp. v. A&J Mfg., LLC*, IPR2015-00056, Paper 10 at 6–7 (PTAB March 23, 2015) (holding that the date a waiver of service is filed with the district court is the date that a petitioner is deemed to have been served).

III. NOTE

Petitioner cites to exhibits’ original page numbers. **Emphasis** in quoted material has been added. Claim terms are presented in *italics*.

IV. SUMMARY OF 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.1001, codes (45), (54). The ‘608 patent describes retrofitting an offline-payment operated machine with a payment module to facilitate electronic transactions. See *id.*, Abstract; 9:16-27; 39:38-46:5; Figs. 28A-B, 29A-B, 30. Figure 28A of the ‘608 patent is illustrative and reproduced below.

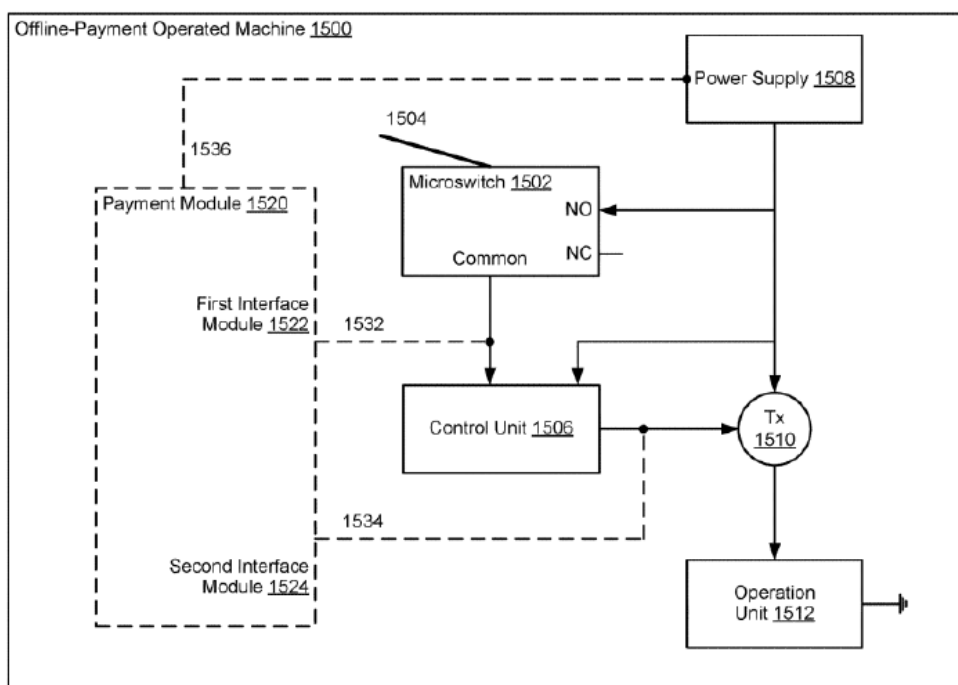


Figure 28A

Figure 28A illustrates a block diagram of the offline-payment operated machine 1500. *Id.*, 39:38-48. “[T]he 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). *Id.*, 39:40-44. The offline-payment operated machine includes, among other components, a coin microswitch 1502 and a control unit 1506. *Id.*, 39:49-56. Microswitch 1502 includes a lever 1504 in the coin slot of the offline-payment operated machine. *Id.*, 39:57-65. When a coin enters the coin slot, lever 1504 is depressed, closing the microswitch 1502 and sending a pulse to control unit 1506. *Id.*, 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.*, 40:7-11.

The machine is retrofitted with a payment module 1520 and functions to “accept electronic payments.” *Id.*, 40:22-26. In certain embodiments, payment module 1520 has a first interface module 1522 configured to output to control unit 1506 one or more electrical pulses emulating analog signals generated by coin receiving microswitch 1502 when coins of a predetermined value pass through. *Id.*, 40:35-49. When the control unit 1506 receives a certain number of pulses it may initiate operation of the offline-payment operated machine. *See id.* The payment module 1520 further includes a short-range communication capability corresponding to a short-range protocol and is configured to communicate with one or more mobile devices. *Id.*, 41:4-20.

As shown below, each of these functionalities and concepts claimed by the ‘608 patent were previously known in the art. Ex.1003, ¶¶3, 31-33.

V. PROSECUTION HISTORY

The ‘608 patent application was filed as Application Number 15/878,352 on January 23, 2018. Ex.1001, codes (21), (22). The ‘608 patent claims priority through a chain of continuations and continuation-in-parts to Provisional Application Number 61/917,936, filed on December 18, 2013. *Id.*, codes (63), (60). It is unnecessary to determine whether the ‘608 patent is entitled to its earliest alleged priority date because the prior art relied upon herein pre-dates the earliest alleged priority date.

During prosecution of the application issuing as the ‘608 patent, the Applicant faced only one rejection based on 35 U.S.C. § 101 and nonstatutory double patenting with respect to U.S. Patent No. 9,875,473. Ex.1002, 173-84. Applicant later filed a terminal disclaimer to this patent to overcome the double patenting rejection and amended the claims in response to the rejection under 35 U.S.C. § 101. *Id.*, 250-60.

VI. LEVEL OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art (“POSITA”) of the ‘608 patent in December of 2013 would have had a bachelor’s degree in electrical engineering, computer engineering, computer science, or equivalent training, and approximately three years of experience with electronic payment systems, vending machine

technologies, or distributed network systems. Lack of work experience can be remedied by additional education, and vice versa. Ex.1003, ¶¶18-20.

VII. CLAIM CONSTRUCTION

In an *inter partes* review, claims “shall be construed 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), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b). The Board only construes the claims to the extent necessary to resolve the underlying controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017). Petitioner submits that for the purposes of this proceeding, the terms of the challenged claims should be given their plain and ordinary meaning, and no terms require specific construction.¹ Ex.1003, ¶30.

VIII. RELIEF REQUESTED AND THE REASONS FOR THE REQUESTED RELIEF

Petitioner asks that the Board institute a trial for *inter partes* review and cancel the Challenged Claims in view of the analysis below.

¹ Petitioner does not concede that any term in the challenged claims meets the statutory requirements of 35 U.S.C. § 112, or that the challenged claims recite patentable subject matter under 35 U.S.C. § 101.

IX. DISCRETIONARY DENIAL WOULD BE INAPPROPRIATE

A. Discretionary denial under the *Fintiv* factors is not appropriate

Under the “*Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation*,” dated June 21, 2022 (“Interim Guidance”), “the PTAB will not discretionarily deny institution of an IPR or PGR in view of parallel district court litigation where a petitioner stipulates not to pursue in a parallel district court proceeding the same grounds as in the petition or any grounds that could have reasonably been raised in the petition.” Interim Guidance, 7. Referred to as a *Sotera* stipulation, “[t]his clarification avoids inconsistent outcomes between the PTAB and the district court and allows the PTAB to review grounds that the parallel district court litigation will not resolve.” *Id.*, 7–8. The Interim Guidance is “binding agency guidance” to the Board. *Id.*, 3.

Consistent with this guidance, Petitioner stipulates that, if the instant IPR is instituted, it will not pursue against the ‘608 patent in the parallel district court proceeding the same grounds as in the petition or any grounds that could have reasonably been raised in the petition.

Furthermore, (1) the parallel district court litigation between PayRange Inc. (“PayRange” or “Patent Owner”) and CSC that is currently pending in the District of Delaware is at the pleading stage and no scheduling order has been entered (*See PayRange Inc. v. CSC ServiceWorks, Inc.*, 1:23-cv-00278-MN (D. Del.) (“PayRange

Litigation”)); (2) Petitioner intends to seek a stay of the PayRange Litigation pending IPR; and (3) the Petition presents compelling evidence of unpatentability in light of the combinations of prior art references, such that, if unrebutted in trial, would lead to a conclusion that the Challenged Claims are unpatentable by a preponderance of the evidence. Interim Guidance, 4-5. Accordingly, the Board should not discretionarily deny institution under *Fintiv*.

B. Discretionary denial under *General Plastic* is not appropriate

The *General Plastic* factors also weigh heavily against discretionary denial. While there has been one prior PGR challenging the ‘608 patent, CSC is a different petitioner than the petitioner in that proceeding. *See* PGR2021-00084. Furthermore, CSC was not involved in any prior suit involving the petitioner in PGR2021-00084. The Board routinely finds that *General Plastic* does not apply to the circumstances here, where the petitioner was sued independently, was sued on largely different products, and has no significant relationship with the prior petitioner. *See, e.g., NetNut Ltd. v. Bright Data Ltd.*, IPR2021-00465, Paper 11 at 8-11 (Aug. 12, 2021).

C. Discretionary denial under 35 U.S.C. § 325(d) is not appropriate

Denial under § 325(d) is not warranted because the challenges presented in this petition are neither cumulative nor redundant to the prosecution of the ‘608 patent. The Examiner did not consider any of the references relied upon in this petition.

X. IDENTIFICATION OF HOW THE CLAIMS ARE UNPATENTABLE

A. Challenged Claims

Petitioner challenges claims 1-2, 4-8, 10-14, 16-20 of the ‘608 patent.

B. Statutory Grounds for Challenges

Grounds	Claim(s)	Basis
#1	1-2, 5, 7-8, 11, 13-14, 17, 19-20	are obvious over Laaroussi in view of LeMay and Sugimoto
#2	4, 6, 10, 12, 16, 18	are obvious over Laaroussi in view of LeMay , Sugimoto , and Okuniewicz

U.S. Patent Publication No. 2010/0227671 to Laaroussi *et al.* (“**Laaroussi**,” Ex.1004) was filed on May 29, 2009 and published on September 9, 2010. Laaroussi is thus prior art under at least U.S.C. § 102(a)(1).

U.S. Patent No. 10,121,318 to LeMay *et al.* (“**LeMay**,” Ex.1006) was filed on September 9, 2011. LeMay is thus prior art under at least U.S.C. § 102(a)(2).

U.S. Patent No. 4,374,557 to Sugimoto *et al.* (“**Sugimoto**,” Ex.1005) was filed on November 14, 1980. Sugimoto is thus prior art under at least U.S.C. § 102(a)(2).

U.S. Patent No. 6,840,860 to Douglas M. Okuniewicz (“**Okuniewicz**,” Ex.1007) was filed on August 15, 2000. Okuniewicz is thus prior art under at least U.S.C. § 102(a)(2).

C. Ground 1: Claims 1-2, 5, 7-8, 11, 13-14, 17, 19-20 are obvious under 35 U.S.C. § 103 over Laaroussi in view of LeMay and Sugimoto

1. Summary of Laaroussi

Similar to the ‘608 patent, Laaroussi relates to an offline payment-operated machine retrofitted with a payment module configured for wireless communication and coin pulse emulation. Laaroussi discloses “a currency media reader hub adapted to be retrofitted in a gaming machine and to interconnect various existing components thereof.” Ex.1004, [0002]. Laaroussi teaches that the currency media reader hub (“CMRH”) is retrofitted to these gaming machines and adapted to (1) connect to a “peripheral component” such as a coins receiving module, (2) communicate with “virtual currency holding media” such as RFID-enabled devices, and (3) communicate wirelessly with a network. *Id.*, Abstract. This arrangement is shown in an annotated version of Figure 3 below:

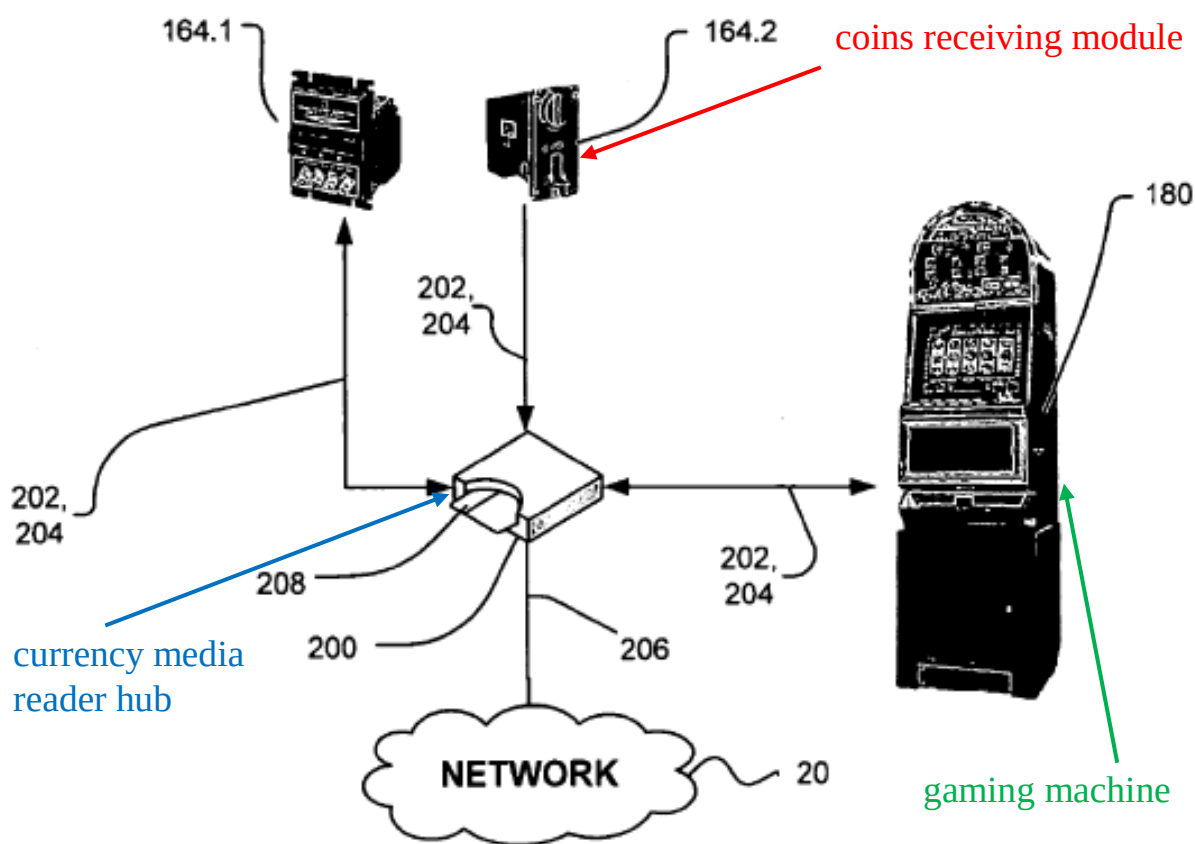


Fig. 3

The CMRH “comprises a plurality of modules interacting together” to allow numerous functionalities, such as cashless payments. It is adapted for cashless transactions with “virtual currency holding media suitable to carry virtual money,” such as an “RFID device” or a “chip-equipped card.” *Id.*, [0061].

The CMRH is retrofitted between a peripheral component of the gaming machine and the electrical components of the gaming machine, such that the CMRH

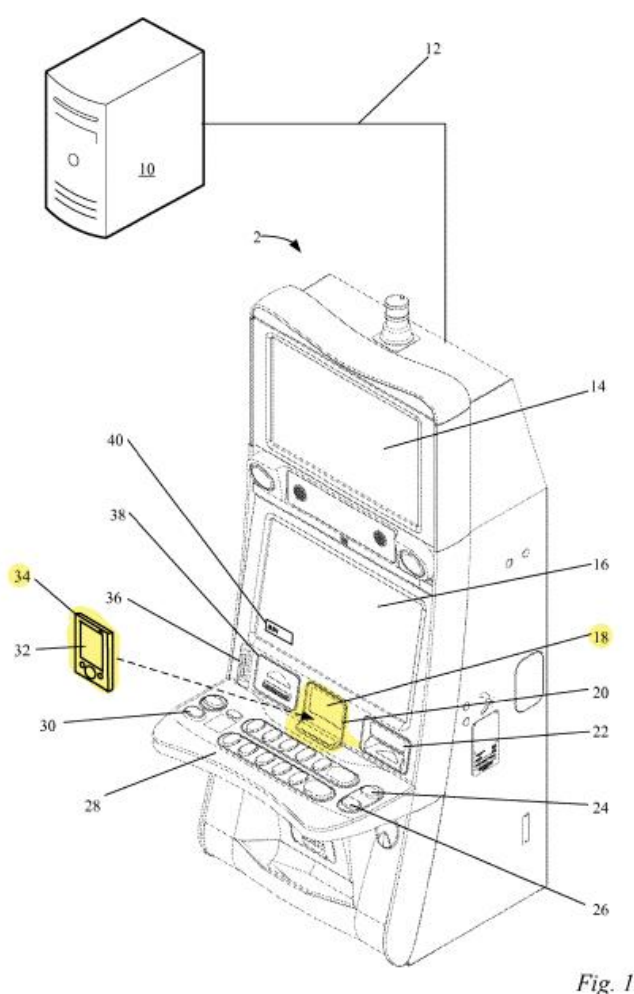
is “adapted to emulate a standard payment acceptance module such as a bill acceptor module or coin acceptor module” and communicate those signals to the gaming machine. *Id.*, [0010-11], [0017]. Once connected, the CMRH “act[s] as a gateway and a translator between peripherals (bill acceptor, coin acceptor, etc.) and the gaming machine.” *Id.*, [0024]. When transferring data such as cashless transaction information to the gaming machine, the CMRH “emulates a receiving module” such as a coins receiving module and, through a communication board module/port, uses “pulse string communication” to transmit that data to the electrical components of the gaming machine. *Id.*, [0058-60]. Ex.1003, ¶¶34-38.

2. Summary of LeMay

LeMay relates to a “gaming system compatible with patron-controlled portable electronic devices, such as smart phones or tablet computers.” Ex.1006, Abstract. Like the ‘608 patent, the electronic gaming machine of LeMay may include a “retrofit device” that communicates with a portable electronic device using a wireless interface and short-range communication protocols such as Bluetooth and near-field communication (“NFC”). *See id.*, Abstract, 6:34-7:6, 22:64-23:11, Fig. 3A.

LeMay explains that the “wireless interface 18 can be configured to receive information, such as information associated with a virtual ticket voucher, from a portable electronic device” using short-range communication protocols such as the

NFC protocol. *Id.*, 6:34-50. Like the “*payment module*” in the ‘608 patent, the “[w]ireless interface 18 can be also used to accept information from a digital wallet application, such [as] an E-wallet application.” *Id.*, 6:51-62. The electronic gaming machine with the wireless interface configured to communicate with a portable electronic device is illustrated in annotated Figure 1 below:



With respect to the “retrofit device,” LeMay explains that it can be configured to perform the virtual ticket voucher and E-wallet processing and wireless interface

control. *Id.*, 23:43-52, 26:47-65. Furthermore, the retrofit device can be configured to perform “device emulation” to respond to the controller 50 of the electronic gaming machine “as if it were another device on the [machine]” such as a bill validator. *Id.*, 24:14-27.

As in the ‘608 patent, LeMay also teaches that operation information is received from the game controller and sent to the mobile device via the short-range wireless transceiver in response to the initial wireless request. *See id.*, 4:53-5:4, 9:33-45, 10:27-40, 11:20-24, 15:52-56, 38:58-39:11. The internal components of the electronic gaming machine are depicted in annotated Figure 3A. Ex.1003, ¶¶39-42.

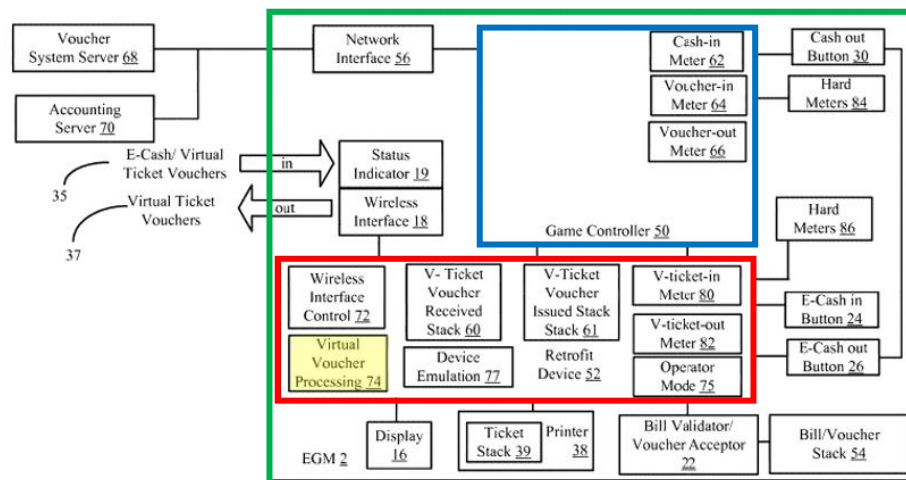


Fig. 3A

3. Summary of Sugimoto

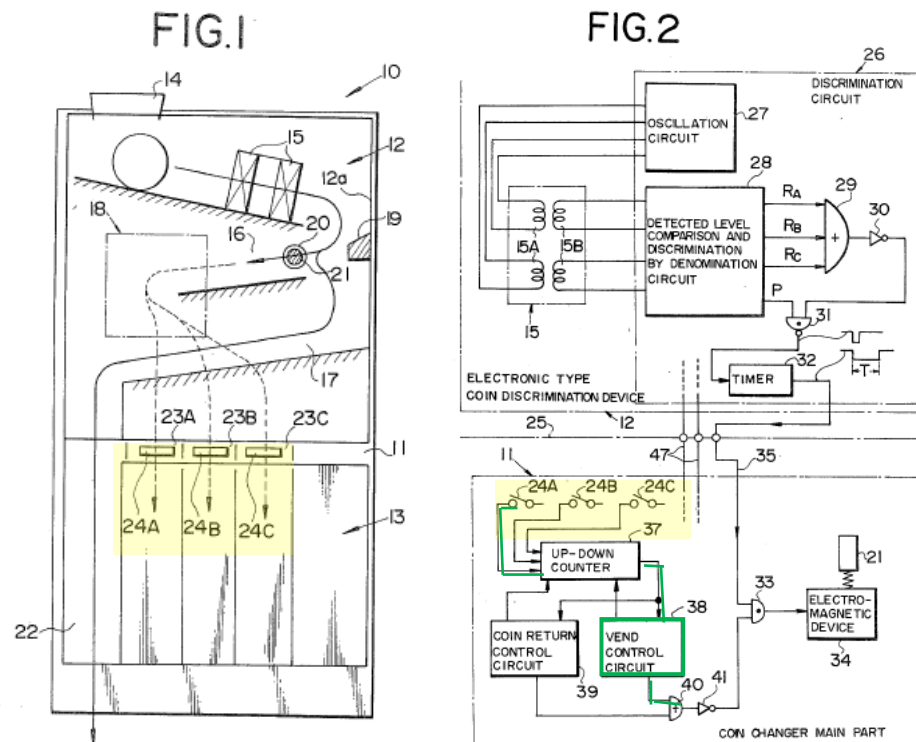
Sugimoto relates to vending machine circuitry and, in particular, the mechanical and electrical signals transmitted between coin switches and machine

controller circuitry. Sugimoto discloses a coin changer for a vending machine comprising a coin changer main part and an electronic type coin discrimination device. Ex.1005, Abstract. Like the “*coin receiving switch*” in the ‘608 patent, the coin changer main part of Sugimoto “comprises coin switches for detecting coins of respective denominations” with a receiving device for “receiving the coins which have passed through the coin switches.” *Id.*

The coin changer first sorts out coins by denomination, and then transfers the coins to the main part of the coin changer through passages 23A, 23B, and 23C. *Id.*, 4:13-33. “Coin switches 24A, 24B, and 24C are provided in these passages 23A, 23B and 23C.” *Id.* Like the “*coins receiving switch*” in the ‘608 patent, “[e]ach of the coin switches 24A, 24B and 24C is actuated in response to passing of each coin and produces a coin detection pulse corresponding to weight of the coin of each denomination (i.e., amount of the coin).” *Id.*; *see also id.*, 7:30-51.

Once these analog detection pulses representing a single coin of a predetermined type are produced through actuation of the coin switches, the pulses “are applied to an up-down counter 37 in which an amount of deposited coins is counted by cumulatively adding amounts of the deposited coins.” *Id.*, 5:31-66. A “vend control circuit 38 compares contents of the counter 37 (the amount of the deposited coins) [obtained by the analog coin pulses generated by the coin switches] with a preset vend price of the article to be [v]ended and thereupon supplies a vend

possible signal to a vender unit” which “dispenses the selected article in response to this vend possible signal.” *Id.* This methodology is depicted in annotated Figures 1 and 2. Ex.1003, ¶¶43-45.



4. Reasons to Combine Laaroussi and LeMay

A POSITA would have been motivated to combine the teachings of Laaroussi with those of LeMay. It would have been obvious, beneficial, and predictable for Laaroussi’s CMRH to account for currency values into and out of the gaming machine via a patron-controlled portable electronic device such as a smart phone. Ex.1003, ¶50. Doing so would have further enhanced the stated objectives of Laaroussi’s system, including to “provide[] a [CMRH] adapted to account an amount of money

stored in a virtual currency media,” to “emulat[e] a gaming machine to accept money from peripherals installed thereon,” and “to transfer an amount of money from the virtual currency holding media to a gaming machine either automatically or by user request.” Ex.1004, [0015], [0021], [0023], Ex.1003, ¶50.

One of ordinary skill in the art when considering the teachings of Laaroussi would have also considered the teachings of LeMay. Both Laaroussi and LeMay relate to gaming machines with retrofit devices for accepting virtual currency. *See* Ex.1004, [0010], [0061]; Ex.1006, Abstract, 1:8-12, 4:19-22. In particular, both describe in detail virtual currency devices that are retrofitted between the gaming machine controller and a peripheral component such as a currency (e.g., bill, coin, ticket) acceptor and capable of emulating, for example, a bill acceptor or coin module. *See* Ex.1004, [0017], [0031], [0059-60]; Ex.1006, 24:14-27, 24:52-64. As such, both Laaroussi and LeMay are analogous art to each other and to the ‘608 patent. *Compare* Ex.1004, [0002], [0010-11], [0013], [0017], [0021], [0023-24], [0031-32]; *and* Ex.1006, Abstract, 22:64-23:11, 23:44-52, 24:52-64, 25:39-56 *with* Ex.1001, 1:41-52, 5:50-61, 6:1-8, 8:4-7; Ex.1003, ¶51.

LeMay identifies and solves known issues with accounting labor and materials costs from using physical currency in electronic gaming machines (“EGMs.”) For instance, LeMay explains that labor costs tied to cash/coin transactions are significant Ex.1006, 1:41-51. LeMay describes systems for

providing virtual ticket voucher functionality that eliminates many of these cost-related disadvantages *Id.*, 15:9-25. A POSITA would have been motivated to modify Laaroussi in view of LeMay's teachings to achieve the reductions in labor and material costs described by LeMay. Ex.1003, ¶52.

Laaroussi describes that objects of the invention include providing a CMRH adapted to account an amount of money stored in a virtual currency holding media and providing a system adapted to manage gaming machines using only cash-in and cash-out transactions. Ex.1004, [0015], [0025]. Laaroussi acknowledges that gaming machines accept payment in the form of tickets, but does not specifically address how virtual ticket currency would be handled in a way that satisfies its objectives. *Id.*, [0003]. LeMay provides detail about how a retrofit device can be configured to accept virtual ticket vouchers, issue virtual ticket vouchers, maintain soft meters (e.g., v-ticket-in, v-ticket-out, total value meters), and report soft meter values to a remote device via a wireless interface. Ex.1006, 23:53-63, 21:19. A POSITA would have recognized that the teachings of LeMay were helpful in achieving the objectives stated by Laaroussi. Ex.1003, ¶53.

As admitted by the '608 patent, there was a large development effort around bringing mobile payment to the retail sector in an effort to provide options to the user and to increase convenience, and mobile payment was a logical extension of use for Internet-connected mobile devices. Ex.1001, 1:64-2:2; Ex.1003, ¶54. LeMay

describes such an effort for bringing mobile payments via smart phones and tablets to gaming machines. Ex.1006, Abstract, 2:12-28, 31:39-59, 32:7-18. LeMay's device is retrofit into an existing electronic gaming machine that does not provide virtual ticket voucher functionality, such that the gaming controller remains unmodified. *Id.*, 15:31-35, 22:64-23:1. LeMay describes that the retrofit device is interposed between the bill validator and the game controller and performs emulation of these peripheral devices. *Id.*, 27:11-31. Similarly, Laaroussi describes that the CMRH may be connected in series between a bill acceptor and the electronic system of the gaming machine and performs similar emulation. Ex.1004, [0059-61]. Modifying Laaroussi's CMRH to include the virtual ticket voucher functionality and short-range wireless interfaces of the retrofit device taught by LeMay would have been well within the level of ordinary skill in the art and would have been predictable without undue experimentation. Ex.1003, ¶54.

Accordingly, the combination of Laaroussi and LeMay represents applying a known technique (accepting and issuing virtual ticket vouchers at a retrofit device and accounting for tickets and ticket values in and out of a gaming machine) to a known device ready for improvement (Laaroussi's CMRH) to yield predictable results (a retrofit device for a gaming machine that handles multiple forms of virtual currency and communicates wirelessly with a mobile device for the purpose of cashless transactions on the gaming machine). Ex.1003, ¶55.

5. Reasons to Combine Laaroussi and Sugimoto

A POSITA would also have been motivated to combine the teachings of Laaroussi with those of Sugimoto. First, it would have been obvious, beneficial, and predictable to use Sugimoto's coin switches in Laaroussi's "coins receiving module." Ex.1003, ¶56. Where Laaroussi's system describes "an amusement machine or a gaming machine adapted to receive bills and coins respectively with a bills receiving module 164.1 and a coins receiving module 164.2" and that "[t]he receiving modules 164.1, 164.2 are operatively connected with the gaming machine 180 using either a pulse string communication mode 202 or a serial port communication mode 204," Sugimoto provides teachings for such a mechanism generating pulses based on the denominations of specific coins Ex.1004, [0058]; Ex.1003, ¶56.

One of ordinary skill in the art when considering the teachings of Laaroussi would have also considered the teachings of Sugimoto. Both Laaroussi and Sugimoto relate to coin receivers for unattended retail machines that communicate via pulse strings. *See* Ex.1004, [0058-60]; Ex.1005, 1:5-8, 2:64-3:4, 5:31-66. As such, both Laaroussi and Sugimoto are analogous art to each other and to the '608 patent. *Compare* Ex.1004, [0002], [0010-11], [0013], [0017], [0021], [0023-24], [0031-32], [0058-60]; *and* Ex.1005, 1:5-8, 2:64-3:4, 5:31-66 *with* Ex.1001, 1:32-52, 5:50-61, 6:1-29, 8:4-7, 15:66-16:22. Ex.1003, ¶57.

As discussed above, Sugimoto describes a coin changer for a vending machine. In particular, Sugimoto describes coin receiving modules with detail regarding how coin switches generate electrical pulses from the passing of a physical object, such as a coin, through the switch. Ex.1005, 1:9-40, 5:30-66. A POSITA would have been motivated to modify Laaroussi in view of Sugimoto's teachings at least because Sugimoto provides additional detail about a known component in Laaroussi (e.g., a coins receiving module). Because Laaroussi relies on the same component for receiving coins described in Sugimoto, a POSITA would have been motivated to modify Laaroussi with the teachings of Sugimoto to further enhance the coin changer functionality of the machine and to save costs. Ex.1003, ¶58.

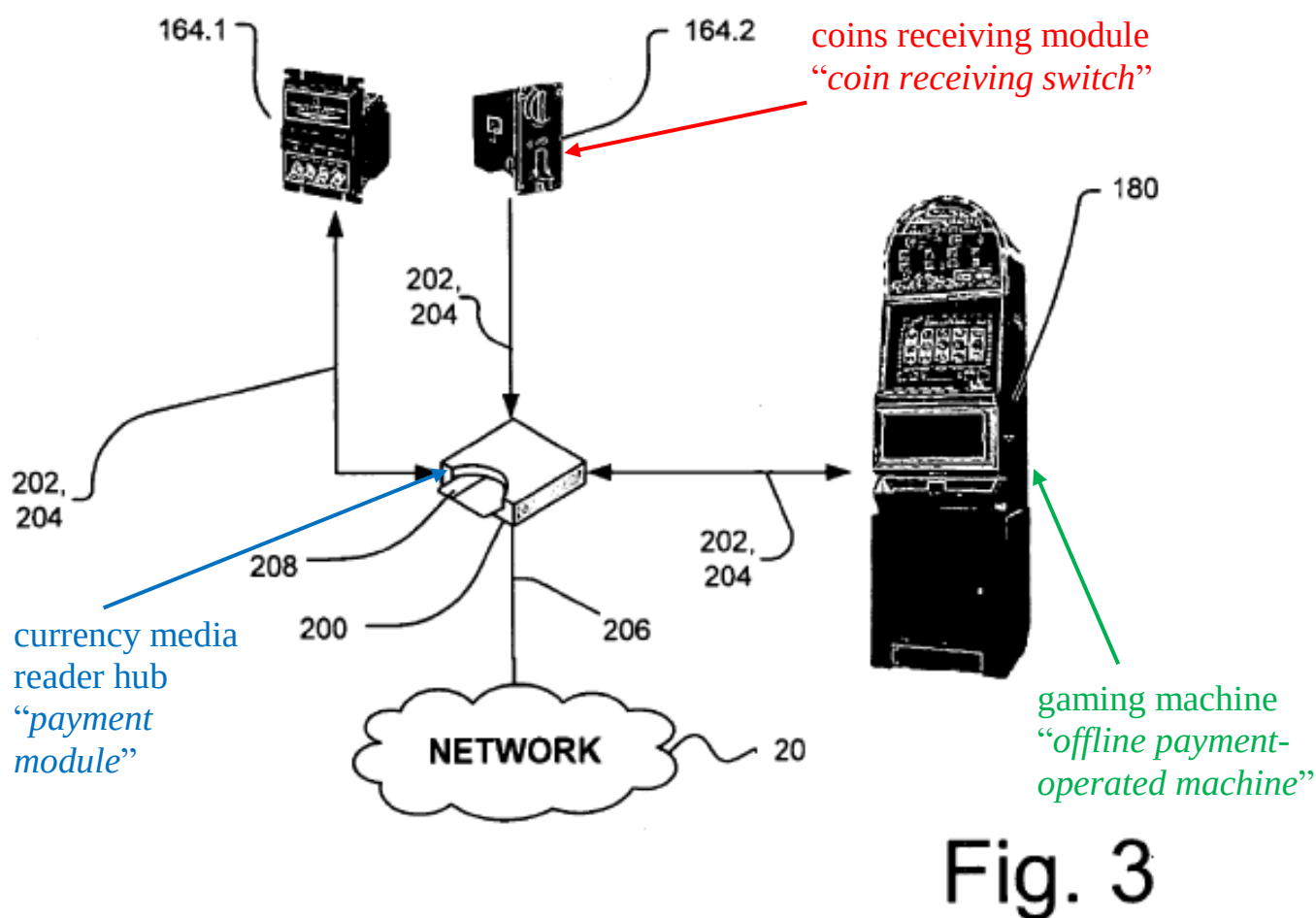
Laaroussi describes that gaming machines are generally equipped with a coins receiving module to receive money from a player, that Laaroussi's CMRH is connected in series between such a coins receiving modules and the electronic system of the gaming machine, and that the currency media reader automatically selects the proper communication language (e.g., a pulse string communication mode). Ex.1004, [0058-60]. But Laaroussi does not specifically describe how coins are accepted, detected, and how coin signals (e.g., pulses) are generated. Ex.1003, ¶59. Sugimoto provides this detail. Ex.1005, 2:64-3:4. A POSITA would thus have recognized that the teachings of Sugimoto were helpful in achieving the objectives stated by Laaroussi. Ex.1003, ¶59.

Accordingly, the combination of Laaroussi and Sugimoto represents applying a known technique (determining the amount of money inserted into a coins receiving module via coin switches) to a known device ready for improvement (Laaroussi's gaming machine with a coins receiving module) to yield predictable results (a gaming machine with a coins receiving module capable of counting the number and currency denominations of coins that are entered, and communicating the number and currency denominations via pulse communications to the gaming machine). Ex.1003, ¶60.

6. Claim 1

[1(pre)] A payment module for an offline payment-operated machine including a coin receiving switch, the payment module comprising:

First, Laaroussi discloses a “*payment module*” for a machine as a currency media reader hub (“CMRH”). Laaroussi describes a “[**CMRH**]” adapted to be retrofitted in a gaming machine and to interconnect various existing components thereof.” Ex.1004, [0002]. “The gaming machine 180 is . . . adapted to receive bills and coins respectively with a bills receiving module 164.1 and a coins receiving module 164.2,” which are “generally physically installed on the gaming machine 180 to receive physical money from a player.” *Id.*, [0058]. “The [**CMRH**] 200 is then connected in series between the receiving modules 164.1, 164.2 and the electronic system of the gaming machine 180.” *Id.*, [0058]. Ex.1003, ¶67.



Ex. 1004 at Fig. 3 (annotated)

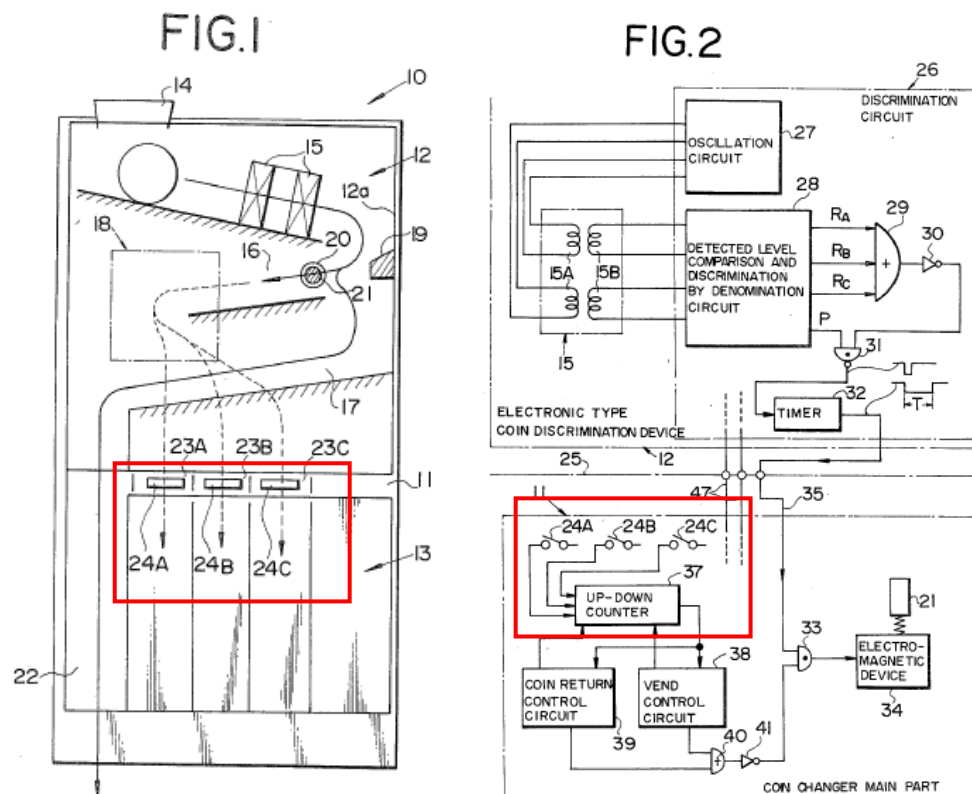
Second, Laaroussi discloses that the machine is an “*offline payment-operated machine*.” Laaroussi discloses a “gaming machine” retrofitted with the CMRH, and the CMRH communicates with a remote server over a network such as the Internet. *Id.*, [0012]. The gaming machine can be a vintage gaming machine with a “primary controller providing the intelligence of the machine” and an “input output controller adapted to communicate with exterior components.” *Id.*, [0055]. The CMRH stores

all transactions such that the gaming machine is “operational and **can be used by players when disconnected from its network**.” *Id.*, [0067], [0002] (describing retrofitting a conventional gaming machine with a CMRH to connect to a network for remote management of payment). As such, a POSITA would recognize that the gaming machine of Laaroussi, particularly in the vintage embodiments, is an “*offline payment-operated machine*” that may be connected to an online network through the CMRH. Ex.1003, ¶68.

Third, Laaroussi discloses a “*coin receiving switch*.” The gaming machine of Laaroussi includes a “peripheral component” installed thereon. Ex.1004, [0010-11]. The peripheral component “could be a money acceptor peripheral to transfer money to the gaming machine.” *Id.*, [0011]. One such money acceptor peripheral described by Laaroussi is a “coin acceptor” or “coin receiving module” physically installed on the gaming machine. *Id.*, [0021], [0024], [0058]. A POSITA would have understood peripherals such as a coin acceptor or coin receiving module to be a “*coin receiving switch*.” Ex.1003, ¶69. Furthermore, it would have been obvious for a POSITA to incorporate a microswitch into the coins receiving module of Laaroussi. Ex.1003, ¶70.

Additionally, a POSITA would have found it obvious to incorporate into the coins receiving module of Laaroussi the coin receiving mechanism, including coin switches, as taught by Sugimoto. Ex.1003, ¶71. Sugimoto teaches that a “coin

changer main part comprises coin switches for detecting coins of respective denominations having been sorted out by the sort-out device,” and a “coin receiving device for receiving the coins which have passed through the coin switches.” *Id.*, Abstract.



Ex. 1005 at Figs. 1, 2 (annotated)

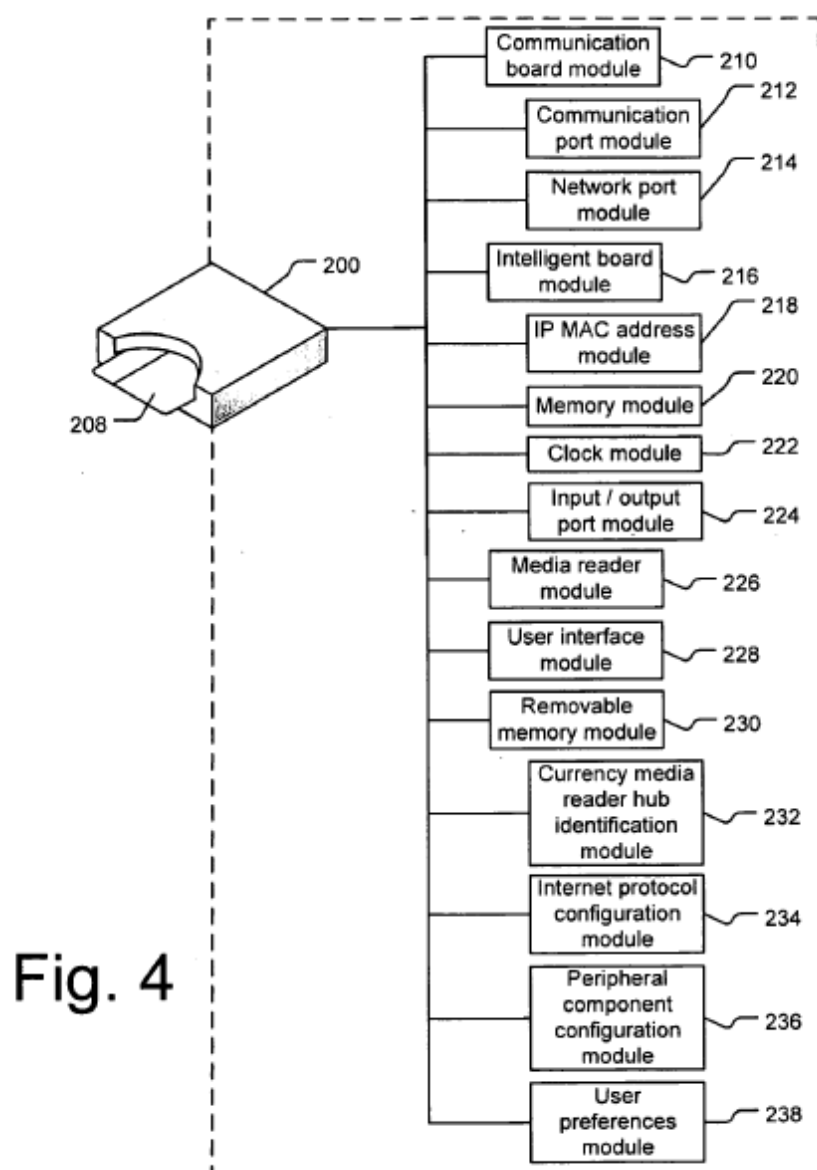
In Sugimoto, once coins enter the receiver and have been sorted based on denomination, “coin switches for detecting passing coins are provided in suitable places in coin passages of the coin changer main part through which coins of respective denominations having been sorted out by the coin discrimination device pass and the number of coins of the respective denominations are counted in

accordance with the output of these coin switched” received through passages Ex.1005 at 2:64-3:19, Figs. 1-2 (at 24A, 24B, and 24C). **“Coin switches 24A, 24B and 24C are provided in these passages 23A, 23B and 23C. Each of the coin switches 24A, 24B and 24C is actuated in response to passing of each coin** and produces a coin detection pulse corresponding to weight of the coin of each denomination (i.e., amount of the coin).” *Id.*, 4:13-33, 7:30-51. Ex.1003, ¶72.

For at least the reasons explained above at Section X.C.5., a POSITA would have been motivated to use the coin switches taught by Sugimoto in Laaroussi in order to detect coins of a particular denomination and send pulses to the gaming machine that represent the value of coins received by the coins receiving module. Ex.1003, ¶¶56-60, 66, 73-74.

[1(a)] a short-range wireless transceiver configured to communicate with one or more mobile devices,

Figure 4 of Laaroussi describes that the CMRH (“*payment module*”) includes a plurality of modules interacting together to provide certain functions.



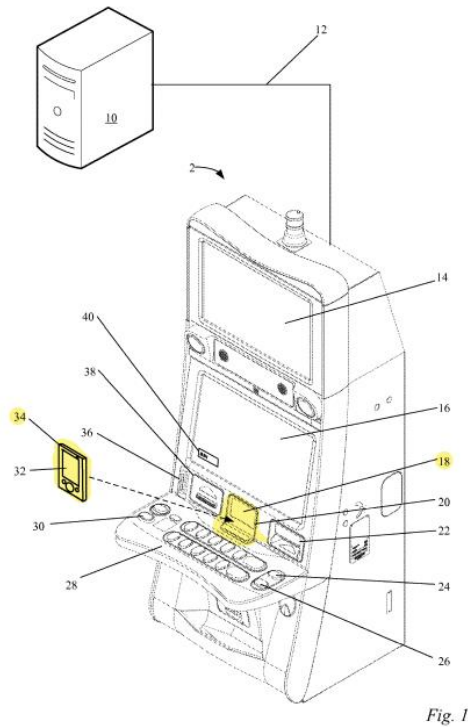
Ex. 1004 at Fig. 4 (annotated)

The CMRH “allows a player to prove that s/he is the holder [of] a determined amount of money that can be used in the gaming machine 180.” Ex.1004, [0061]. Laaroussi explains that a player’s money can be “virtually secured” in some medium, such as an RFID device, or “any other virtual currency holding media suitable to carry

virtual money.” *Id.*, [0061]. The person can make use of the virtual money through interaction with the CMRH, which has both a reading and writing capability. *Id.*, [0061]. Ex.1003, ¶76.

A POSITA would appreciate that virtual currency holding media such as the “RFID device” in Laaroussi uses a short-range wireless transceiver, because these communication protocols are specifically used for wireless transmission over short distances and RFID technology requires use of a transceiver. *See* Ex.1012 at 10. Ex.1003, ¶¶77-79.

A POSITA would have also found it obvious to incorporate the wireless interface from LeMay into the CMRH of Laaroussi. Ex.1003, ¶¶82-85. In LeMay, a “gaming system compatible with patron-controlled portable electronic devices, such as smart phones or tablet computers, is described.” Ex.1006, Abstract.



Ex. 1006 at Fig. 1 (annotated)

In particular, Figure 1 of LeMay depicts “interactions between a portable electronic device and an EGM [electronic gaming machine] with a game controller configured to provide virtual ticket-in and ticket-out services. . . . With respect to FIGS. 3A and 3B, an EGM retrofitted with one or more devices that provide virtual ticket-in and/or virtual ticket-out services is described.” *Id.*, 5:5-13. The portable electronic device, such as that depicted as element 34 of Figure 1, may be a “smartphone or a tablet computer,” such as an iPhone or iPad. *Id.*, 31:39-59.

LeMay depicts an electronic gaming machine “where the game controller remains unmodified and where virtual ticket-in/ticket-out functions are performed

by retrofit devices, such as a retrofit printer and/or a retrofit bill/ticket acceptor. Ex. 1006 at 15:27-37.

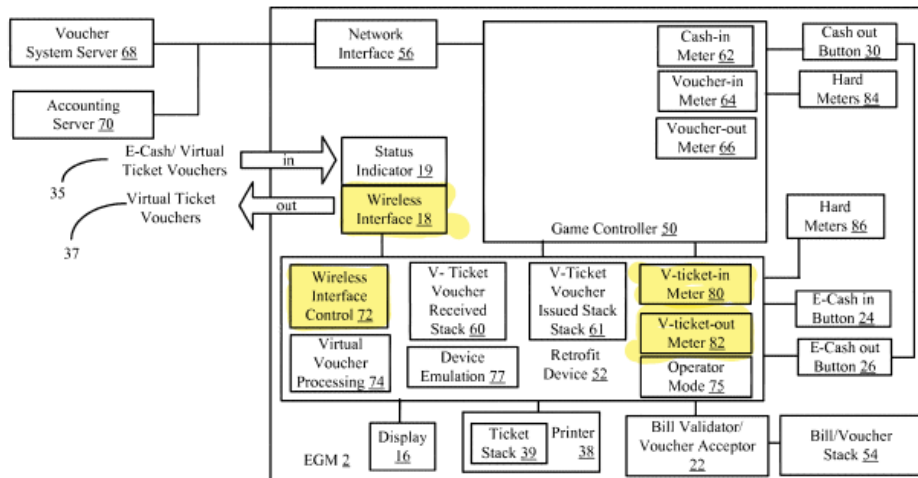


Fig. 3A

Ex. 1006 at Fig. 3A (annotated)

The retrofit device 52 on electronic gaming machine (“EGM”) 2 includes a wireless interface control 72 connected to wireless interface 18 accepting E-Cash/virtual ticket vouchers 35 into the EGM. *Id.*, Fig. 3A. “The control of the wireless interface 18, such as powering it on and off in response to certain events, **establishing communication sessions with portable electronic devices** and sending information via the wireless interface 18, **can be handled by the wireless interface control 72**” of the retrofit device 52. *Id.*, 15:56-64. A POSITA would understand the wireless interface control 72 of retrofit device 52 to include a “wireless

transceiver” (wireless interface 18 coupled to interface control 72) that is “*configured to communicate with one or more mobile devices*” (portable electronic device 34). Ex.1003, ¶¶82-85.

Furthermore, LeMay teaches that the “wireless interface 18 can be configured to receive information . . . from a portable electronic device 34,” such as by near field communication (NFC) protocol “designed with a communication range of 4 cm or less.” Ex.1006, 6:34-50. Other short-range communication protocols such as Bluetooth may also be used for communication between wireless interface 18 and the portable electronic device, and Bluetooth further requires this communication to occur using RF transceivers. Ex. 1006 at 13:51-63; Ex. 1011 at 89, 108. Ex.1003, ¶¶82-85.

For at least the reasons explained above at Section X.C.4., a POSITA would have been motivated to implement LeMay’s wireless interface coupled to an interface control to the CMRH of Laaroussi’s system. Ex.1003, ¶¶50-55, 75, 82-85.

[1(b)] one or more processors,

Laaroussi renders obvious the payment module comprising one or more processors. For example, Laaroussi describes implementing its architecture with multiprocessor systems, microprocessor-based or programmable consumer electronics, and minicomputers. Ex.1004, [0051]. A POSITA would have understood the CMRH (“*payment module*”) of Laaroussi to include such a processor

at least because the functionalities that the CMRH must satisfy (e.g., connecting to the Internet, uploading data to a database, etc.) would require one or more processors to carry out. Ex.1003, ¶¶86-88.

A POSITA also would have found it obvious to incorporate the virtual voucher processing unit from LeMay into the CMRH of Laaroussi. Ex.1003, ¶89. LeMay describes a retrofit device 52 with a virtual voucher processing unit 74, which “can be configured to perform virtual voucher processing.” Ex.1006, 23:44-63. As such, the retrofit device “can include a processor and memory for updating the software meters and a non-volatile memory for storing the soft meter values.” *Id.*

For at least the reasons explained above at Section X.C.4., a POSITA would have been motivated to implement LeMay’s retrofit device processor into the CMRH of Laaroussi in order to carry out the computing processes described by LeMay and the CMRH of Laaroussi. Ex.1003, ¶¶50-55, 90-91.

[1(c)] 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

First, Laaroussi describes that a communication board module/port (“*first interface module*”) is part of the CMRH and allows the CMRH to interface with other devices. Ex.1004, [0062]. For instance, the “communication board module

compris[es] a communication port module adapted **to connect the [CMRH] with a peripheral component.**” Ex.1004, [0030]. In general, the communication board module of the CMRH is “utilized to manage communication to/from the [CMRH].” Ex.1004, [0062]. Ex.1003, ¶93.

Second, Laaroussi describes that the communication board module/port is configured to output to a control unit of the offline payment-operated machine one or more electrical pulses. Laaroussi discloses that a CMRH (“*payment module*”) is “connected in series between the [coins receiving module] 164.2 and the electronic system of the gaming machine.” *Id.*, [0059]. Laaroussi provides that the gaming machine could include “a **primary controller** providing the intelligence of the machine” and “an **input output controller** adapted to communicate with exterior components,” (Ex.1004, [0055]) both of which are “*control unit[s]*” of the gaming machine. Ex.1003, ¶94.

The CMRH is “adapted to emulate a standard payment acceptance module such as a . . . coin acceptor module,” where the coin acceptor module that was originally connected to the gaming machine may be connected to the CMRH that itself is connected to the gaming machine to provide communications thereto. Ex.1004, [0017], [0058]. Once the CMRH including the communication board module/port is connected to the system, the CMRH “emulates a receiving module” (such as the coins receiving module) to communicate with the gaming machine,

typically using “a pulse string communication mode.” *Id.*, [0060]; Ex.1003, ¶95. A POSITA would understand that the pulse string communications from the CMRH are sent via the communication board module/port because this is the module responsible for managing communications to and from the CMRH to other components, which would include the controllers of the gaming machine. See Ex.1004, [0062]; Ex.1003, ¶95.

Third, Laaroussi renders obvious that 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. For instance, Laaroussi explains that a communication protocol is used to transmit signals from the receiving modules, such as the coin receiving module of the gaming machine, to the gaming machine “in accordance with the amount of money received by the receiving modules.” Ex.1004, [0058]. A POSITA would understand these signals corresponding to the amount of money received to be “analog signal[s] generated by the coin receiving switch of the offline payment-operated machine in response to insertion of a single coin of a predetermined type,” at least because the pulses generated by actuation of the coin switch are analog pulses, and each analog pulse pertains to a coin of a particular denomination. Ex.1003, ¶96. Furthermore, the ‘608 patent describes these signals as “preset sequence[s] of payment acceptance signals”

corresponding to a “preset number of coins.” Ex.1001, 40:50-58. The CMRH is connected in series between the coins receiving module and the gaming machine. Ex.1004, [0059]. The CMRH can thus communicate the analog signals generated by the coins receiving switch to the gaming machine using a number of communication languages—“normally a pulse string communication mode.” *Id.*, [0060]; Ex.1003, ¶96.

The annotated illustration of Figure 2 below shows the pathway of the electrical pulses emulated by the CMRH sitting between the currency receiver module (e.g., coins receiving module) and the gaming system. Ordinarily, the currency receiver module 164 (e.g., coins receiving module) is connected to the gaming machine 120 through a serial port interface 146 coupled to the system bus 123. *Id.*, [0054]. The system bus 123 then couples various components to the processing unit 121 of the gaming system. *Id.*, [0052]. In a gaming system, the processing unit may be a system controller for game operation. *See id.*, [0052] (noting the system bus can include a memory controller bus structure); [0055] (noting that gaming machines could rely on systems built with a primary controller providing machine intelligence and an input output controller for communication with exterior components). As described above, the CMRH sits between the currency receiver module 164 (e.g., coins receiving module) and gaming machine 120 to emulate the transaction signals typically produced by the coins receiving

module and to pass those signals ultimately to the controller in the form of electric pulses for gaming operation. *See id.*, [0026] (describing the connection of a CMRH between the currency receiver module and gaming machine); Ex.1003, ¶97.

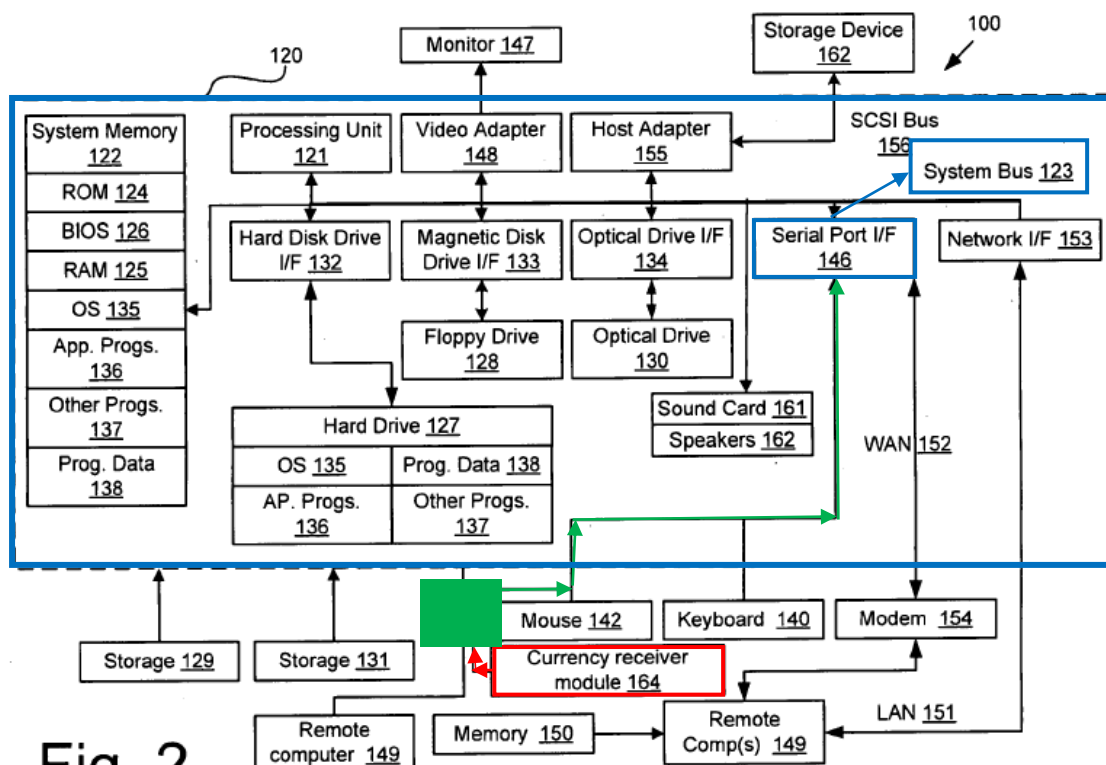


Fig. 2

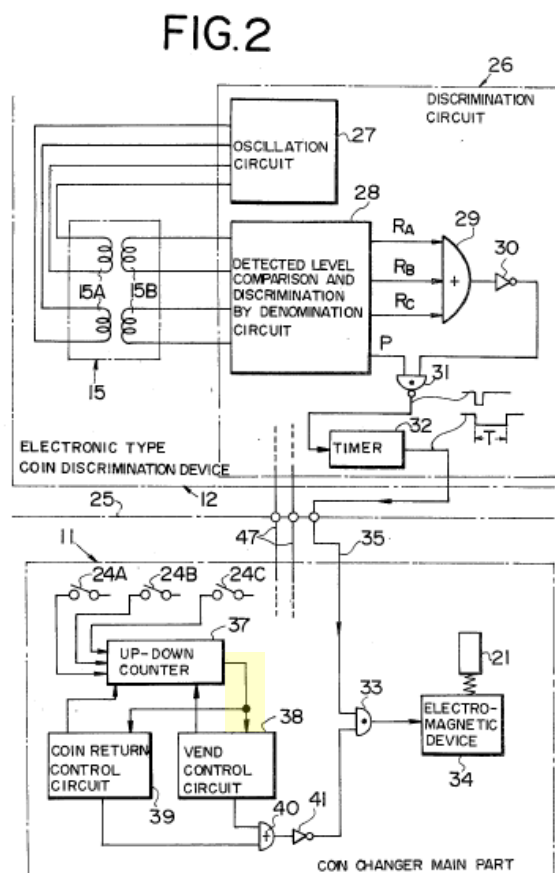
Ex. 1004 at Fig. 2 (annotated)

Fourth, it would have been obvious to modify Laaroussi with the teachings of Sugimoto to disclose this limitation. Sugimoto discloses a coin changer with switches and a control circuit “for effecting control operations including a money amount counting control,” as well as a “vend control” mechanism. *Id.*, Abstract. Ex.1003, ¶99.

In Sugimoto, “the number of coins of the respective denominations are counted in accordance with the output of the[] coin switches.” *Id.*, 2:64-3:19. The coin switches produce “a signal for counting the number of coins.” *Id.* Once the coins have been sorted by the sort out device by denomination, the coins of a predetermined type are received in the coin receiving device of the coin changer by passing through a particular coin switch. *Id.*, 4:13-33. Each of the coin switches “is actuated in response to passing of each coin and **produces a coin detection pulse corresponding to weight of the coin of each denomination** (i.e., amount of the coin).” *Id.*, 4:13-33, 7:30-51, Fig. 2. A POSITA would understand this process from Sugimoto to involve “*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.*” Ex.1003, ¶¶100-101.

Sugimoto also explains how these electrical pulses are counted and transmitted to the controller of a vending machine to cause operation of the machine. Sugimoto states that known control functions, “such as cumulatively counting deposited coins for judging whether a selected article is vendible or not and paying out change,” are performed with the circuitry of the vending machine controller. Ex.1005, 5:31-66. Each of the analog electrical pulses detected by the coin switches “are applied to an up-down counter 37 in which an amount of deposited coins is

counted by cumulatively adding amounts of the deposited coins,” and providing a corresponding signal to a vend control circuit 38. *Id.*, 5:31-66. Ex.1003, ¶102.



Ex. 1005 at Fig. 2 (annotated)

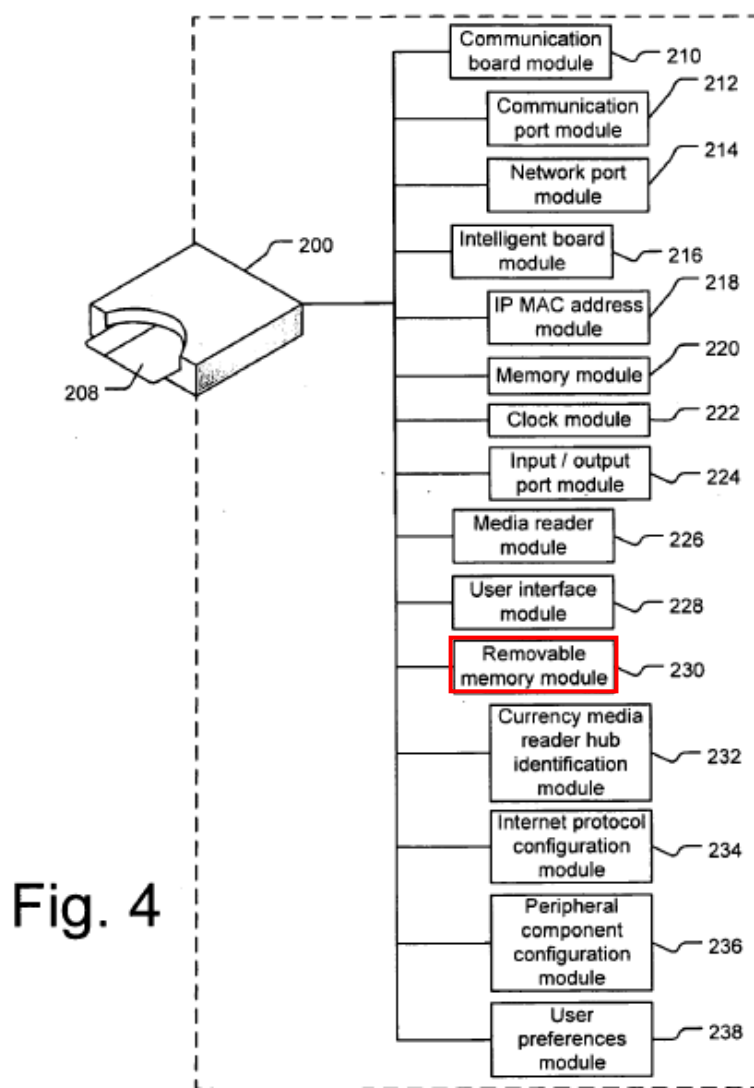
“**A vend control circuit 38** compares contents of the counter 37 (the amount of the deposited coins) with a preset vend price of the article to be [vended] and thereupon **supplies a vend possible signal to a vender unit** . . . and also subtracts the price of the vended article from the contents of the counter 37.” *Id.*, 5:31-66. A POSITA would understand the vend control circuit in Sugimoto to be a “control unit of the

offline payment-operated machine” because the vend control circuit receives the electrical pulses from the coin switches and supplies a signal to a vender unit for dispensing an article. Ex.1003, ¶103.

For at least the reasons explained above at Section X.C.5., a POSITA would have found it obvious to incorporate the coin changer in Sugimoto that includes the coin switches and vend control circuit to the coins receiving module of Laaroussi. Ex.1003, ¶¶56-60, 92, 104.

[1(d)] memory with one or more programs for execution by the one or more processors, the one or more programs including instructions for:

Laaroussi discloses a payment module that includes memory with one or more programs for execution by the one or more processors. Laaroussi explains that the invention is described in the general context of computer-executable instructions, such as program modules, being executed by a computerized device, where the program modules include routines, programs, objects, components, data structures, applets, WEB 2.0 type of evolved networked centered applications, etc. that perform a task(s) or implement particular abstract data types. Ex.1004, [0051]. Laaroussi notes that these program modules may be located in local and/or remote memory storage devices. *Id.*, [0051]. The memory module in the CMRH is depicted in Figure 4 below. *See also id.*, [0062]. Ex.1003, ¶106.



Ex. 1004 at Fig. 4 (annotated)

Laaroussi explains that the memory module includes additional modules to “carry and transmit information,” to take actions to “properly manage the [CMRH] 200 and its communications with the network.” *Id.*, [0063]. As one example, the memory module includes a “peripheral component configuration module 236 adapted to further adjust the communication with the receiving modules 164.1, 164.2”—which

includes the coins receiving module. *Id.* The memory module also includes instructions to dialogue and interact with other modules of the CMRH. *See id.* A POSITA would understand these modules performing functions within the memory module of the CMRH to be programs for executing instructions. Ex.1003, ¶107.

For at least the reasons discussed in Section X.C.4., a POSITA would have also understood Larroussi alone or in combination with LeMay to include a processor that executes the programs contained in the modules in the CMRH. Ex.1003, ¶¶50-55, 108-109.

[1(e)] 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;

First, Laaroussi describes the critical role of the CMRH in tracking transactions to the gaming machine—both from the coins receiving module and the virtual currency holding media or card. Ex.1004 at [0065-66]; Ex.1003, ¶111.

Second, Laaroussi explains that the CMRH is “adapted to store transactions occurring on a gaming machine in memory.” Ex.1004, [0026]. The CMRH may, for example, include a “removable memory module 230 . . . to carry and transmit information providing a unique identification to the [CMRH] 200.” *Id.*, [0063]. When the network is offline, “all transactions between the [user’s] card 208 and the gaming machine 180 are stored in the memory module 220 of the [CMRH] 200.” *Id.*, [0067]. This allows the gaming machine to be operational when the overall

system is disconnected from a network. *Id.*, [0067]. A POSITA would thus understand that the CMRH may store in its memory module all communications from peripheral components like the coins receiving module. Ex.1003, ¶112.

Third, Laaroussi explains that the CMRH is connected in series between the coins receiving module and the gaming machine (Ex.1004, [0059]), and emulates the communications of the coins receiving module—such as pulse string communications—for passing to the gaming machine to initiate operation of the machine. *See id.*, [0058-60]; Ex.1003, ¶113. Since the CMRH stores all such transaction information, a POSITA would understand that when emulating the coins receiving module the CMRH stores the electrical pulses for passing to the gaming machine for operation in an offline environment. *See* Ex.1004, [0067]; Ex.1003, ¶114.

Fourth, a POSITA would have found it obvious to store in the CMRH of Laaroussi the number of electrical pulses produced by the coin switches necessary to initiate operation of an offline-payment operated machine, as taught by Sugimoto. Ex.1003, ¶115. As previously discussed, the coin changer in Sugimoto includes switches that generate electrical pulses based on the denomination of a particular coin. Those electrical pulses are applied to an up-down counter and passed to the vend control circuit, which “compares contents of the counter 37 (the amount of the deposited coins) with a preset vend price of the article to be [vended].” Ex.1005,

5:31-66. Once the vend control circuit has received enough electrical pulses to reach the preset vend price of an article, the vend control circuit “supplies a vend possible signal to a vender unit,” which “dispenses the selected article in response to this vend possible signal.” Ex.1005, 5:31-66. A POSITA would have been motivated to modify the payment module memory of Laaroussi to include the up-down electrical pulse counter of Sugimoto such that the memory module of Laaroussi’s CMRH stores the electrical pulses generated by Sugimoto’s coin switches. Ex.1003, ¶¶50-60, 115-16.

[1(f)] 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

Laaroussi describes communicating transaction information between the CMRH and “virtual currency holding media suitable to carry virtual money.” See [1(a)]; Ex.1004, [0061]. Examples of such virtual currency holding media would be from a “mobile device” that transmits transaction information wirelessly, including an RFID device. Ex.1004, [0061]; Ex.1003, ¶118.

Furthermore, the electronic gaming machine of LeMay includes a retrofit device (“*payment module*”) with a wireless interface and controller (“*wireless transceiver*”) for communicating with a portable electronic device (“*mobile device*”) using NFC and Bluetooth, among other communication protocols (“*short-range wireless [communications]*”). See [1(a)]; Ex.1003, ¶119.

In LeMay, the retrofit device may be configured to provide “virtual ticket-in and/or virtual ticket-out services” for an electronic gaming machine. Ex.1006, 5:5-13. These include handling the interactions between a portable electronic device and the electronic gaming machine. *Id.*, 5:5-13. The “**wireless interface 18 can be configured to receive information**, such as information associated with a virtual ticket voucher, **from a portable electronic device**,” including via NFC or Bluetooth protocols. *Id.*, 6:34-7:6. Ex.1003, ¶120.

Once communications are established between the electronic gaming device and the portable electronic device (“*mobile device*”), “an application executing on the portable electronic device can generate a touch screen button to initiate an E-cash in transaction or an E-cash out transaction.” *Id.*, 28:8-25. When the portable electronic device detects the press of a button on the application, a message is sent to the wireless interface of the retrofit device in the EGM to generate an electronic transaction. *Id.*, 28:8-25. Ex.1003, ¶121. Examples of portable electronic devices with such applications are smartphones and tablets such as iPhone or iPad by Apple. Ex. 1006 at 31:57-59. Ex.1003, ¶121.

For at least the reasons explained above in Section X.C.4., a POSITA would have been motivated to implement LeMay’s technique of using a mobile device to generate a wireless request to initiate a cashless operation of the gaming machine

(“offline-payment operated machine”) in Laaroussi. Ex.1003, ¶¶50-55, 117, 122-124.

[1(g)(i)] 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;

As described above in [1(pre), 1(c)], a POSITA would have understood that to emulate the coins receiving module, the CMRH in Laaroussi would determine a number of electrical pulses (e.g., using a pulse string communication mode) to output to the controller (“control unit”) of the gaming machine via the communication board module (“first interface module”) in order to initiate the operation of the gaming machine (“offline payment-operated machine”). Ex.1003, ¶¶66-74, 92-104, 126.

Furthermore, as described above in Section X.C.5., a POSITA would have been motivated to combine Sugimoto’s vend control circuit, which must determine the number of pulses to output to the vending machine to dispense an article, with Laaroussi’s CMRH that emulates this device to output a pulse string to the controller of the gaming machine to initiate operation. Ex.1003, ¶¶56-60, 127.

Moreover, as discussed above in Section X.C.4., a POSITA would have been motivated to combine the portable electronic device with an application taught by LeMay to initiate a cashless transaction. Ex.1003, ¶¶50-55, 128. Because the

operation of the gaming machine described by Laaroussi alone or in combination with Sugimoto would not occur until initiated by the wireless request from the portable electronic device disclosed in LeMay, such as via the E-cash in/out requests, a POSITA would understand that this step occurs “in response to the wireless request” taught by LeMay. Ex.1003, ¶128.

[1(g)(ii)] in response to the wireless request: 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;

As described above in [1(c)], Laaroussi describes that the CMRH emulates the coins receiving module on one side and the gaming machine on the other side. A POSITA would have understood that to emulate the coins receiving module, the CMRH would cause the controller (“*control unit*”) of the gaming machine (“*offline payment-operated machine*”) to initiate the operation using the virtual currency (“*cashless operation*”) by issuing the first number of electrical pulses (e.g., a number of electrical pulses equivalent to the pulses communicated by the number of coins being emulated as received using the pulse string communication mode) to the controller via the communications board module (“*first interface module*”). [1(c)]; Ex.1003, ¶¶92-104, 130. Furthermore, as described above in Section X.C.5., a POSITA would have been motivated to combine the teachings of Laaroussi and Sugimoto to render obvious this limitation. Ex.1003, ¶¶56-60, 131.

Moreover, as discussed above in Section X.C.4., a POSITA would have been motivated to combine the portable electronic device with an application taught by LeMay to initiate a cashless transaction. Ex.1003, ¶¶56-60, 132. Because the operation of the gaming machine described by Laaroussi alone or in combination with Sugimoto would not occur until initiated by the wireless request from the portable electronic device disclosed in LeMay, a POSITA would understand that this step occurs “in response to the wireless request” taught by LeMay. Ex.1003, ¶132.

[1(g)(iii)] in response to the wireless request: 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.

As discussed in more detail above in Section [1(a)], Laaroussi describes communicating transaction information between the CMRH and “virtual currency holding media suitable to carry virtual money.” Ex.1004, [0061]. Ex.1003, ¶¶75-85, 133.

Furthermore, as described above in [1(a)], the electronic gaming machine of LeMay includes a retrofit device (“*payment module*”) with a wireless interface and controller (“*wireless transceiver*”) for communicating with a portable electronic device (“*mobile device*”) using NFC and Bluetooth, among other communication protocols (“*short-range wireless [communications]*”). Ex.1003, ¶¶75-85, 134.

LeMay also teaches that operation information (e.g., information associated with a virtual ticket voucher) is sent to the mobile device via the short-range wireless

transceiver in response to the initial wireless request. *See* Ex.1006, 4:53-5:4 (describing receipt of virtual ticket voucher information by the portable electronic device sent from the electronic gaming machine), 10:27-40, 11:20-24. Ex.1003, ¶135. For instance, the E-cash in request initiates an operation to play on the gaming machine (e.g., by inserting virtual cash or credits.). Ex.1006, 9:33-45; 38:58-39:11 15:52-56, 16:35-42. The operation information (e.g., information such as the validation number or amount associated with a virtual ticket voucher) corresponds to the initiated operation of the gaming machine at least because it corresponds to the initiated operation of playing a game (and the resulting effect of, for instance, wagering money or credits), which cannot be initiated until the virtual ticket is validated, as well as to the machine's operation of redeeming/issuing virtual ticket vouchers. *See* Ex. 1006 at Abstract, Claim 1 (describing sending virtual ticket voucher information including validation number and amount via the wireless interface to the portable electronic device, where the virtual ticket voucher information corresponds to "play of a wagering game"), 12:3-28 (describing validation). Ex.1003, ¶136.

LeMay also explains this operation information can be sent from the retrofit device ("*payment module*") to the portable electronic device. Ex.1006, 23:44-24:3, 25:57-26:27, 15:27-37; Ex.1003, ¶137. Figure 3A of LeMay illustrates this concept.

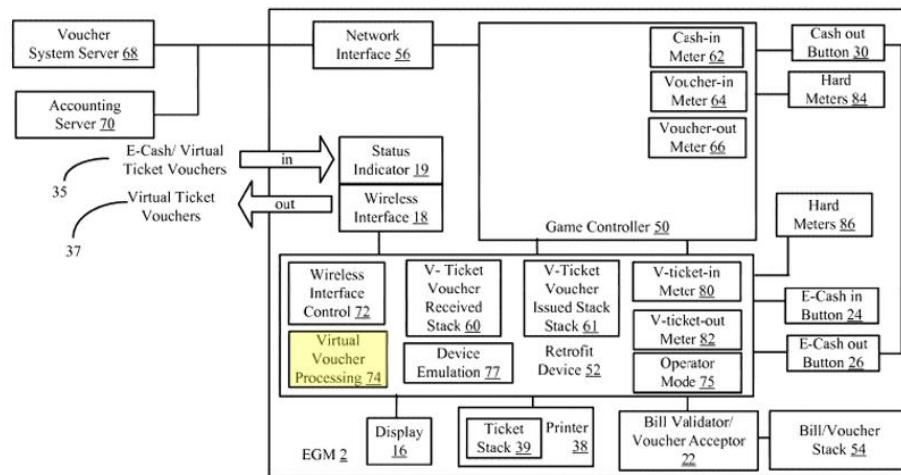


Fig. 3A

Ex. 1006 at Fig. 3A (annotated)

For at least the reasons explained at X.C.4., a POSITA would have been motivated to implement LeMay's technique of providing operation information of the electronic gaming machine to a portable electronic device in the Laaroussi system. Ex.1003, ¶¶50-55, 138-39.

7. Claim 2

[2(pre)] The payment module of claim 1, wherein the one or more programs further comprise instructions for:

See [1(pre)], [1(d)]. Ex.1003, ¶140.

[2(a)] 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,

Laaroussi renders obvious, alone or in combination with LeMay and/or Sugimoto, “*sending the operation information [to a mobile device]*” and “*causing the offline payment-operated machine to initiate operation by issuing the first number of electrical pulses to the control unit [of the offline payment-operated machine]*.” See [1(c)], [1(g)(iii)]; Ex.1003, ¶141.

Furthermore, LeMay teaches the retrofit device causing the gaming machine to initiate operation (e.g. via an E-cash/virtual ticket voucher in operation received from a mobile device), and then, in response thereto, the retrofit device obtaining a notification (e.g., print instructions including a ticket voucher amount) from the gaming machine (e.g., from the game controller). For instance, LeMay explains that an E-cash in transaction is initiated on a portable electronic device and a message requesting an E-cash in transaction is sent to the electronic gaming machine (“EGM”), where, in response to receiving the message, an E-cash in transaction and an E-cash out transaction may be generated. Ex.1006, 28:8-25. LeMay’s EGM is coupled to a retrofit device that allows it to perform virtual ticket functions and emulate a bill validator (configured to accept and validate cash currency and (printed) ticket vouchers.) *Id.*, 22:64-23:11, 24:52-64, 1:28-31. Ex.1003, ¶¶142-43.

With respect to the redemption of virtual ticket vouchers, LeMay describes that the EGM stores virtual ticket voucher information, displays the amount of credits or currency redeemed, and generates a change voucher. *Id.*, 39:12-33. In

LeMay, the game controller can detect a redemption request and send a notification to a second device, such as the retrofit device, to take certain actions. *Id.* For example, the game controller can send a notification to “generate a virtual ticket voucher of a particular amount” that is intended to pass to the machine printer. *Id.* But instead, the retrofit device can sit between the game controller and the printer to intercept this message. *Id.*, 27:11-25, 26:5-27. The retrofit device, including similar logic as the printer, can then use this notification to “construct and send a message that allows a virtual ticket voucher to be sent to the portable electronic device,” such as the virtual ticket voucher including operation information as described above (*see* 1[g][iii]). *Id.* In LeMay, the notification (e.g., message to generate a virtual ticket voucher of a particular amount) indicates initiation of the operation at least because the redeemed amount indicated by this notification represents a credit based on the amount wagered during gameplay and is also related to the initiation of the operation of the virtual ticket redemption/issuance of the machine. *Id.*, 39:23-33, Claims 15, 34. Ex.1003, ¶144.

Thus, Laaroussi in view of LeMay and Sugimoto teach, prior to sending the operation information (e.g., a virtual ticket voucher including information such as validation number or amount) to a mobile device and after causing the offline payment-operated machine to initiate operation (e.g. through the coin pulse emulations described by Laaroussi and Sugimoto in response to the E-cash in request

of LeMay), obtaining a notification from the EGM game controller (e.g., a message/print instructions to generate a virtual ticket voucher of a particular amount) indicating initiation of the operation of the offline payment-operated machine. *See* Sections X.C.4., X.C.5. Ex.1003, ¶145. A POSITA would have been motivated to combine the notifications from the game controller of LeMay in Laaroussi's gaming system. *See id.*

[2(b)(i)] in response to receiving the notification: generating the operation information based at least in part on the notification; and

LeMay teaches that the operation information (e.g., information associated with a virtual ticket voucher) that is sent to the mobile device (e.g., portable electronic device) is generated in response to and based at least in part on the notification (e.g., a message/print instructions to generate a virtual ticket voucher of a particular amount.) For instance, LeMay explains that the retrofit device generates a virtual ticket voucher with a validation number and an amount in response to receiving a message/instruction to print and sends the virtual ticket voucher to the portable electronic device. Ex.1006, 23:53-55 (“The retrofit device 52 can be configured to accept virtual ticket vouchers, **issue virtual ticket vouchers** or combinations thereof.”), 16:35-59 (describing that, in response to receiving a high-level message from the game controller such as “generate a virtual ticket voucher of a particular amount,” secondary devices, which may include the retrofit device,

“generate low-level commands” such as commands that “**construct and send a message that allows a virtual ticket voucher to be sent to the portable electronic device.**”); *see also* 26:5-27. The virtual ticket voucher that is sent to the portable electronic device includes at least a validation number and/or amount that are based on the message/instructions to print from the game controller. *Id.*, Figs. 4B, 4C; 35:30-45, 39:23-33, Claim 1. Ex.1003, ¶146.

For the same reasons as described above at Section X.C.4., a POSITA would have been motivated to combine the game controller messaging disclosed by LeMay to the system in Laaroussi to initiate machine operation. Ex.1003, ¶¶50-55, 147.

[2(b)(ii)] in response to receiving the notification: storing the generated operation information in the memory of the payment module.

LeMay teaches that the generated operation information (e.g., a virtual voucher ticket, validation number, and/or amount) is stored in the memory of the retrofit device (“*payment module*”) in response to receiving a notification (e.g., a message/print instructions to generate a virtual ticket voucher of a particular amount.) For instance, LeMay describes that the retrofit device is configured to maintain a “v-ticket voucher issued stack 61.” Ex.1006, 24:4-13, Claim 7 (“The gaming device of claim 1, further comprising **a non-volatile memory**, wherein when executed by the processor, the instructions cause the processor to cause **the**

8. Claim 5

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

Laaroussi discloses the payment module of claim 1, as set forth in detail above. *See* [1(pre)]. Ex.1003, ¶151.

In addition, Laaroussi discloses the offline payment-operated machine is not connected to any networks. For example, Laaroussi explains that in certain embodiments, the gaming machine retrofitted with the CMRH can be a “vintage gaming machine” that relies on “older automated systems” that are “built with a primary controller” providing machine intelligence and an “input output controller” adapted to communicate with exterior components. Ex.1004, [0055]. Laaroussi teaches that the CMRH is retrofitted to these gaming machines and adapted to (1) connect the CMRH to a “peripheral component” such as a coins receiving module, (2) communicate with “virtual currency holding media” such as RFID-enabled devices, and (3) communicate with a network. *Id.*, Abstract. Laaroussi also describes that the CMRH is configured to store all transaction information so that the gaming machine can be used by players when disconnected from its network. *See* [1(pre)]; Ex.1004, [0013], [0067]; Ex.1003, ¶152. Because the gaming machine in Laaroussi may be a “vintage gaming machine” retrofitted with a CMRH for network connection, and that the gaming machine may operate in the absence of network

connection, Laaroussi renders obvious “the payment module of claim 1, wherein the offline payment-operated machine is not connected to any networks.” Ex.1003, ¶153.

9. Claim 7

[7(pre)] A method for accepting electronic payments at an offline payment-operated machine, the method comprising:

See [1(pre)]. Ex.1003, ¶154.

[7(a)] 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 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:

See [1(pre)], [1(a-d)]. Ex.1003, ¶155.

[7(b)] 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;

See [1(e)]. Ex.1003, ¶156.

[7(c)] 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

See [1(f)]. Ex.1003, ¶157.

[7(d)(i)] 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;

See [1(g)(i)]. Ex.1003, ¶158.

[7(d)(ii)] in response to the wireless request: 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

See [1(g)(ii)]. Ex.1003, ¶159.

[7(d)(iii)] in response to the wireless request: 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.

See [1(g)(iii)]. Ex.1003, ¶160.

10. Claim 8

[8(pre)] The method of claim 7, further comprising:

See [2(pre)]. Ex.1003, ¶161.

[8(a)] 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

See [2(a)]. Ex.1003, ¶162.

[8(b)(i)] in response to receiving the notification: generating the operation information based at least in part on the notification; and

See [2(b)(i)]. Ex.1003, ¶163.

[8(b)(ii)] in response to receiving the notification: storing the generated operation information in the memory of the payment module.

See [2(b)(ii)]. Ex.1003, ¶164.

11. Claim 11

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

See [5]. Ex.1003, ¶165.

12. Claim 13

[13(pre)] An offline payment-operated machine, comprising:

See [1(pre)]. Ex.1003, ¶166.

[13(a)] 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;

See [1(pre)], [1(c)]. Ex.1003, ¶167.

[13(b)] a control unit; and

See [1(pre)], [1(c)], [1(e)]. Ex.1003, ¶168.

[13(c)] a payment module that includes:

See [1(pre)]. Ex.1003, ¶169.

[13(d)] a short-range wireless transceiver configured to communicate with one or more mobile devices;

See [1(a)]. Ex.1003, ¶170.

[13(e)] one or more processors;

See [1(b)]. Ex.1003, ¶171.

[13(f)] 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

See [1(c)]. Ex.1003, ¶172.

[13(g)] memory storing one or more programs to be executed by the one or more processors, the one or more programs comprising instructions for:

See [1(d)]. Ex.1003, ¶173.

[13(h)] 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;

See [1(e)]. Ex.1003, ¶174.

[13(i)] 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

See [1(f)]. Ex.1003, ¶175.

[13(j)(i)] 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;

See [1(g)(i)]. Ex.1003, ¶176.

[13(j)(ii)] in response to the wireless request: 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

See [1(g)(ii)]. Ex.1003, ¶177.

[13(j)(iii)] in response to the wireless request: 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.

See [1(g)(iii)]. Ex.1003, ¶178.

13. Claim 14

[14(pre)] The offline payment-operated machine of claim 13, wherein the one or more programs further comprise instructions for:

See [2(pre)]. Ex.1003, ¶179.

[14(a)] 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

See [2(a)]. Ex.1003, ¶180.

[14(b)(i)] in response to receiving the notification: generating the operation information based at least in part on the notification; and

See [2(b)(i)]. Ex.1003, ¶181.

[14(b)(ii)] in response to receiving the notification: storing the generated operation information in the memory of the payment module.

See [2(b)(ii)]. Ex.1003, ¶182.

14. Claim 17

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

See [5]. Ex.1003, ¶183.

15. Claim 19

[19(pre)] A payment module for an offline payment-operated machine including a coin receiving switch, the payment module comprising:

See [1(pre)]. Ex.1003, ¶184.

[19(a)] a short-range wireless transceiver configured to communicate with one or more mobile devices;

See [1(a)]. Ex.1003, ¶185.

[19(b)] one or more processors;

See [1(b)]. Ex.1003, ¶186.

[19(c)] 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;

See [1(c)], [1(g)(ii)]. Ex.1003, ¶187.

A POSITA would further understand that the communications described in these sections, which are commands, can be sent to the control unit using a serial interface. See Ex. 1004 at [0032] (describing a “serial communication mode” and “universal serial bus mode” as two communication modes for communication

between the CMRH and the gaming machine control unit), [0058], [0060]. Ex.1003, ¶188.

[19(d)] 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

The “*second interface module*” in this limitation is the communication board module/port of the CMRH of Laaroussi, which in Section [1(c)] is mapped to the “*first interface module*.” See [1(c)]; see also Ex. 1001 at 46:9-14 (describing that the labels “first,” “second,” and “third” are “meant solely for purposes of designation and not for order or limitation). For the reasons discussed therein, a POSITA would understand that the “*second interface module*” (e.g. communication board module/port) is 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. See *id.* Alternatively, for the reasons described in Section [1(c)], a POSITA would have been motivated to incorporate the “up-down counter” functionality of Sugimoto into the communication board module of the CMRH of Laaroussi in order to count the electrical pulses generated by the coin switches of Sugimoto. See *id.*; Ex.1003, ¶189.

Furthermore, for the reasons discussed in Section [2(b)(ii)], a POSITA would have been motivated to combine LeMay with Laaroussi to disclose a second interface module that “store[s] an output of the control unit corresponding to an operation of the offline payment-operated machine.” Ex.1003, ¶¶50-55, 190-92.

[19(e)] memory with one or more programs for execution by the one or more processors, the one or more programs including instructions for:

See [1(d)]. Ex.1003, ¶193.

[19(f)] 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;

See [1(e)]. Ex.1003, ¶194.

[19(g)] 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

See [1(f)]. Ex.1003, ¶195.

[19(h)(i)] 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;

See [1(g)(i)]. Ex.1003, ¶196.

[19(h)(ii)] in response to the wireless request: causing the offline payment-operated machine to initiate the requested cashless operation by issuing the first command to the control unit via the first interface module; and

See [1(g)(ii)]. Ex.1003, ¶197.

[19(h)(iii)] in response to the wireless request: 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.

See [1(g)(iii)]. Ex.1003, ¶198. A POSITA would appreciate that the amount of credit issued on the virtual ticket voucher sent to the mobile device indicates the value of the requested cashless operation corresponding to a number of coins 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, at least because the amount of credit applied to the virtual ticket voucher would reflect the amount of pulses corresponding to an E-cash in transaction greater or less than the amount waged on gameplay. Ex.1003, ¶199.

16. Claim 20

[20(pre)] The payment module of claim 19, wherein the one or more programs further comprise instructions for:

See [2(pre)]. Ex.1003, ¶200.

[20(a)] 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

See [2(a)], [19(c)]. Ex.1003, ¶201.

[20(b)(i)] in response to receiving the notification: generating the operation information based at least in part on the notification; and

See [2(b)(i)]. Ex.1003, ¶202.

[20(b)(ii)] in response to receiving the notification: storing the generated operation information in the memory of the payment module.

See [2(b)(ii)]. Ex.1003, ¶203.

D. Ground 2: Claims 4, 6, 10, 12, 16, 18 are obvious over Laaroussi in view of LeMay, Sugimoto, and Okuniewicz

1. Summary of Laaroussi

See Section X.C.1.

2. Summary of LeMay

See Section X.C.2.

3. Summary of Sugimoto

See Section X.C.3.

4. Reasons to Combine Laaroussi, LeMay, and Sugimoto

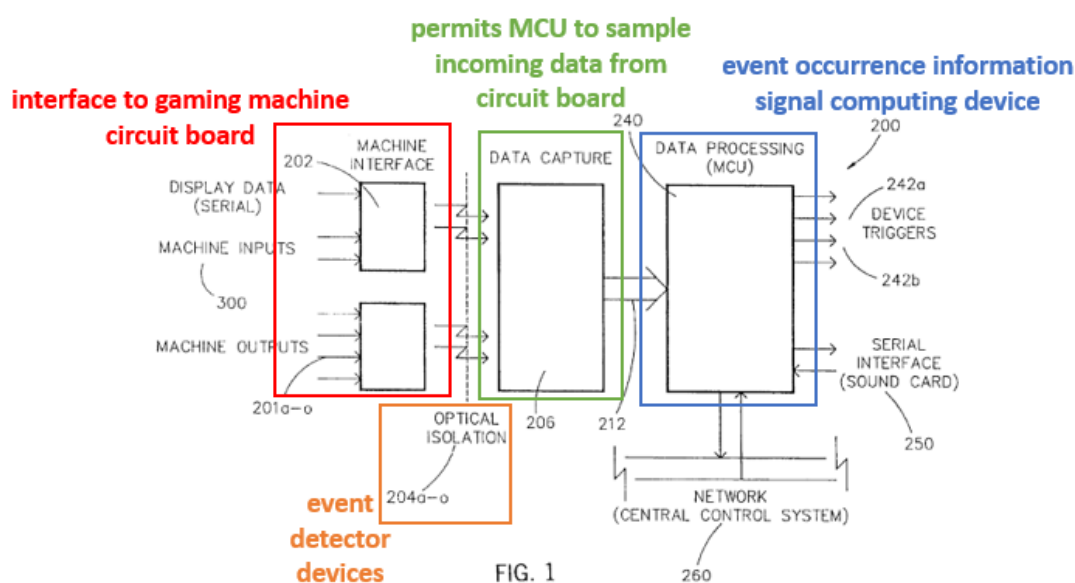
See Sections X.C.4. and X.C.5.

5. Summary of Okuniewicz

Okuniewicz provides “a printing and dispensing bonusing system for electronic gaming devices, particularly a casino gaming device.” Ex.1007, Abstract. Like the ‘608 patent, the electronic gaming machine of Okuniewicz includes an electronic activity detector and command generator that is retrofit to the circuit board

of an electronic device (such as a casino gaming device.) *See id.*, Abstract, 7:11-28, Fig. 1. Ex.1003, ¶46.

Like the “*payment module*” in the ‘608 patent, the electronic activity detector and command generator “will identify that an event is taking place within the machine” and “recognize[] the event and dictate[] the proper response,” which in Okuniewicz includes providing a printing and dispensing bonusing system for electronic gaming devices (e.g., casino gaming devices.) *Id.*, 3:54-59, 5:31-33. Ex.1003, ¶47. The electronic activity detector and command generator (200) is illustrated in annotated Figure 1 below:



With respect to the retrofit electronic activity detector and command generator, Okuniewicz explains that it “includes a machine interface 202 which consists of the connection of the programmable electronic activity detector and

command generator 200 to the circuit board 300 of an electronic device,” for instance, a slot machine. *Id.*, 7:13-24. The machine input/output is either sampled on the circuit board itself or the gaming machine may include a wiring harness for simple connection. *Id.* In addition to the machine interface 202, the electronic activity detector and command generator includes event detector devices that are configured to detect when an event occurs on the machine output lines 201*a-o* and signify the occurrence of the event by transferring an event occurrence notification signal to the data capture segment 206. *Id.*, 7:29-46, 11:14-24. As in the ‘608 patent, Okuniewicz teaches that obtaining the notification from the offline payment-operated machine includes sampling the control signals from the control unit. *Id.*, 8:1-10, 8:60-66, 9:11-23. Ex.1003, ¶48.

Okuniewicz further teaches vending machine functionality for a casino gaming machine, describing that the system would include a dispensing device which could be a vending device or the like which is operative to output bonus items including toys, vouchers, and coupons *Id.*, 15:43-48, 4:21-24. Ex.1003, ¶49.

6. Reasons to Combine Laaroussi and Okuniewicz

For the reasons set forth below, a POSITA would have been motivated to combine the teachings of Laaroussi with those of Okuniewicz. For instance, it would have been obvious, beneficial, and predictable for Laaroussi’s CMRH to sample incoming data (control signals) to determine event occurrences on the circuit board

of the gaming machine. Ex.1003, ¶50. Doing so would have further enhanced the stated objectives of Laaroussi's system, including to "emulat[e] a gaming machine to accept money from peripherals installed thereon." Ex.1004 at [0021]; Ex.1003, ¶50. Okuniewicz also provides teachings for how to achieve the retrofit connection with the electronic system of a gaming machine described by Laaroussi. Ex.1004, [0059]; Ex.1007, 3:38-53, 7:11-28; Ex.1003, ¶50.

One of ordinary skill in the art when considering the teachings of Laaroussi would have also considered the teachings of Okuniewicz. Both Laaroussi and Okuniewicz relate to gaming machines with retrofit devices that interface with the gaming machine control unit. *See* Ex.1004, [0010], [0021], [0025], [0055], [0059-60]; Ex.1007, Abstract, 3:29-53, 3:67-4:5, 7:11-28. As such, both Laaroussi and LeMay are analogous art to each other and to the '608 patent. *Compare* Ex.1004, [0002], [0010-11], [0013], [0017], [0021], [0023-24], [0031-32]; *and* Ex.1007, Abstract, 3:38-53, 1:34-36, 5:13-23, 6:21-26, 6:31-38 *with* Ex.1001, 1:41-52, 5:50-61, 6:1-8, 8:4-7. Ex.1003, ¶¶51-52.

As discussed above, Okuniewicz describes an electronic activity detector and command generator for a gaming machine such as a slot machine. Ex.1007, 3:33-53. A POSITA would have been motivated to modify Laaroussi in view of Okuniewicz's teachings at least because Okuniewicz provides additional detail on how a physical connection is made and the signals that are processed where

Laaroussi describes that a connection is made between two devices (a retrofit CMRH and a gaming machine) at a higher level. Ex.1003, ¶52. A POSITA would have been further motivated by Okuniewicz's teachings on sampling input and control signal data such that the signals are not tampered with in order to conform to gaming regulations. Ex.1003, ¶¶52-54.

Laaroussi describes a CMRH is connected in series between a coins receiving modules and the electronic system of the gaming machine, and that the currency media reader automatically selects the proper communication language (e.g., a pulse string communication mode) to communicate. Ex.1004, [0059-60]; Ex.1003, ¶¶52-54. Okuniewicz provides detail about how such a connection is made to the circuit board of a gaming machine. Ex.1007, 7:11-28. A POSITA would have recognized that the teachings of Okuniewicz were helpful in achieving the objectives stated by Laaroussi. Ex.1003, ¶¶52-54.

Accordingly, the combination of Laaroussi and Okuniewicz represents applying a known technique (sampling control signals from the circuit board of a gaming machine) to a known device ready for improvement (Laaroussi's CMRH connected to and configured to emulate a gaming machine) to yield predictable results (a CMRH configured to sample control signals from the circuit board of a gaming machine in order to emulate the control signals from the circuit board of a gaming machine). Ex.1003, ¶55.

7. Claim 4

[4(a)] 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;

For the reasons discussed above in Section [2(b)(ii)], a POSITA would have been motivated to apply the v-ticket voucher issued stack 61 of LeMay to the CMRH (“*payment module*”) of Laaroussi. See [2(b)(ii)]. Ex.1003, ¶204. As described therein, the v-ticket voucher issued stack of the retrofit device in LeMay interfaces with the game controller 50. See [2(b)(ii)]. Ex.1003, ¶204. As such, a POSITA would understand the v-ticket voucher issued stack to be a “*second interface module*” as described in this claim. Ex.1003, ¶204.

Furthermore, as discussed above in Section [2(b)(ii)], the v-ticket voucher issued stack (“*second interface module*”) of the retrofit device (“*payment module*”) in LeMay stores v-ticket voucher information, which would include the message/print instructions to from the game controller 50 (“*control unit*”) to generate a virtual ticket voucher of a particular amount. See Section [2(b)(ii)]. Ex.1003, ¶205. Moreover, a POSITA would understand this information used to generate the virtual ticket voucher that is sent via notification to the retrofit device constitutes “*control signals*” because they are signals generated by the game controller (“*control unit*”) related to controlling game operation. Ex.1003, ¶205. For

the reasons explained in Section [2(b)(ii)], a POSITA would have been motivated to incorporate this second interface module configured to store control signals into the CMRH of the gaming system of Laaroussi. *See* Sec. [2(b)(ii)]. Ex.1003, ¶¶205-06.

[4(b)] wherein obtaining the notification from the offline payment-operated machine includes sampling the control signals from the control unit via the second interface module.

First, for the reasons discussed above in Section [2(b)(ii)], Laaroussi combined with LeMay renders obvious a payment module that obtains the notification from the offline payment-operated machine. *See* Sec. [2(pre)], [2(a)]. Ex.1003, ¶207.

Second, a POSITA would have found it obvious to use the sampling technique taught by Okuniewicz when obtaining this notification. Ex.1003, ¶208. Okuniewicz discloses a “detection device for detecting specific event occurrences on the electronic circuit board” of an electronic gaming device by “sampling” in order to “determine whether the particular event has occurred.” Ex.1007, 3:29-53. Okuniewicz explains that such event sampling includes “a bill accepted into the machine, a jackpot being hit, coin in, coin out and other display data.” *Id.* As Okuniewicz teaches, the detection device/command generator “detect[s] event occurrences on the circuit board of a gaming device and then issue[s] appropriate

[commands] in response to those event occurrences which will cause connected output devices to perform designated tasks.” *Id.*, 4:48-57

In the gaming device taught by Okuniewicz, the detection device/command generator includes (1) an “electronic activity detecting portion of the card” that “will identify that an event is taking place within the machine,” and (2) the “command portion of the card” which “recognizes the event and dictates the proper response.” *Id.*, 3:54-4:5. As such, this device can “read and react to gaming machine outputs, and, depending on the programming of the device, output the appropriate command signals to output devices to drive the output devices to perform their respective functions.” *Id.* Ex.1003, ¶209.

For at least the reasons discussed above in X.D.6., a POSITA would have been motivated to implement Okuniewicz’s technique of sampling event occurrence notification signals relating to the operation of a gaming machine event (“*control signals*”) from the electronic apparatus circuit board (“*control unit*”) to the gaming system of Laaroussi. Ex.1003, ¶61-65, 210.

A POSITA would have further been motivated to modify the CMRH in Laaroussi to incorporate the v-ticket voucher issued stack to facilitate the communication of operation information to a mobile device. *See* Section X.C.4. Ex.1003, ¶¶50-55, 211.

8. Claim 6

[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.

First, as discussed in Section [1(pre)], Laaroussi discloses a payment module and offline payment-operated machine. See [1(pre)]. Ex.1003, ¶212.

Second, a POSITA would have found it obvious to modify the gaming machine of Laaroussi to allow it to dispense goods as bonuses in response to winning gameplay, as taught by Okuniewicz. Ex.1003, ¶213. Okuniewicz discloses “a printing and dispensing bonusing system for electronic gaming devices,” where the “operator/player of the electronic gaming device is awarded selected bonus items and awards.” Ex.1007, Abstract, 4:18-22. Such bonusing items dispensed from the electronic gaming device, as taught by Okuniewicz, could include plush toys, meal vouchers, promotional materials, and “other prizes or almost any other type of prize award.” *Id.*, 4:22-40. As such, a POSITA would understand that the electronic gamine device of Okuniewicz is **a vending machine** that dispenses goods on demand. Ex.1003, ¶¶213-15.

For the reasons explained above at X.D.6., a POSITA would have been motivated to implement Okuniewicz’s dispensing of bonusing items to Laaroussi’s gaming machine system. Ex.1003, ¶¶61-65, 214-15.

9. Claim 10

[10(a)] 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 machine,

See [4(a)]. Ex.1003, ¶216.

[10(b)] and obtaining the notification from the offline payment-operated machine includes sampling control signals from the control unit via the second interface module.

See [4(b)]. Ex.1003, ¶217.

10. Claim 12

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

See [6]. Ex.1003, ¶218.

11. Claim 16

[16(a)] 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;

See [4(a)]. Ex.1003, ¶219.

[16(b)] wherein obtaining the notification from the offline payment-operated machine includes sampling the control signals from the control unit via the second interface module.

See [4(b)]. Ex.1003, ¶220.

12. Claim 18

[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.

See [6]. Ex.1003, ¶221.

XI. CONCLUSION

Petitioner respectfully requests that the Board institute review and find the Challenged Claims unpatentable.

Respectfully submitted,

Dated: July 17, 2023
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/Mark D. Schafer/
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XII. MANDATORY NOTICES

A. Real Party-in-Interest

Pursuant to 37 C.F.R. § 42.8(b)(1), Petitioner certifies that it is the real party-in-interest.

B. Related Matters

Pursuant to 37 C.F.R. § 42.8(b)(2), to the best knowledge of the Petitioner, the ‘608 patent is or was involved in the following cases:

Case Heading	Number	Venue	Filed
<i>PayRange, Inc. v. CSC ServiceWorks, Inc.</i>	1:23-cv-00278	D. Del.	Mar. 15, 2023
<i>PayRange, Inc. v. CSC ServiceWorks, Inc.</i>	1:22-cv-00502	D. Del.	Apr. 19, 2022
<i>PayRange, Inc. v. KioSoft Technologies, LLC et al.</i>	1-20-cv-24342	S.D. Fla.	Oct. 21, 2020

C. Lead and Back-up Counsel and Service Information

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Please address all correspondence in this proceeding to lead and back-up counsel. Petitioner consents to service in this proceeding by email at the addresses above.

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), Petitioner hereby certifies, in accordance with and reliance on the word count provided by the word-processing system used to prepare this Petition, that the number of words in this paper is 13,762. Pursuant to 37 C.F.R. § 42.24(d), this word count excludes the table of contents, table of authorities, mandatory notices under § 42.8, certificate of service, certificate of word count, appendix of exhibits, and any claim listing.

Dated: July 17, 2023

/Mark D. Schafer/
Mark D. Schafer
Counsel for Petitioner
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CERTIFICATE OF SERVICE

The undersigned certifies that, in accordance with 37 C.F.R. § 42.6(e) and 37 C.F.R. § 42.105, service was made on Patent Owner as detailed below.

<i>Date of service</i>	July 17, 2023
<i>Manner of service</i>	FEDERAL EXPRESS
<i>Documents served</i>	Petition for <i>Inter Partes</i> Review Under 35 U.S.C. § 312 and 37 C.F.R. § 42.104 of U.S. 10,891,608; Petitioner's Exhibit List; and Exhibits 1001-1013.
<i>Persons served</i>	Morgan, Lewis & Bockius LLP 1400 Page Mill Road Palo Alto, CA 94304

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