



US 20060223631A1

(19) **United States**

(12) **Patent Application Publication**
Walker et al.

(10) **Pub. No.: US 2006/0223631 A1**

(43) **Pub. Date: Oct. 5, 2006**

(54) **SYSTEMS AND METHODS FOR FACILITATING PLAY USING REVERSED PAYOUT TABLES**

(60) Provisional application No. 60/374,384, filed on Apr. 19, 2002.

Publication Classification

(76) Inventors: **Jay S. Walker**, Ridgefield, CT (US);
James A. Jorasch, Stamford, CT (US)

(51) **Int. Cl.**
A63F 9/24 (2006.01)

(52) **U.S. Cl.** 463/25

Correspondence Address:
WALKER DIGITAL
2 HIGH RIDGE PARK
STAMFORD, CT 06905 (US)

(57) **ABSTRACT**

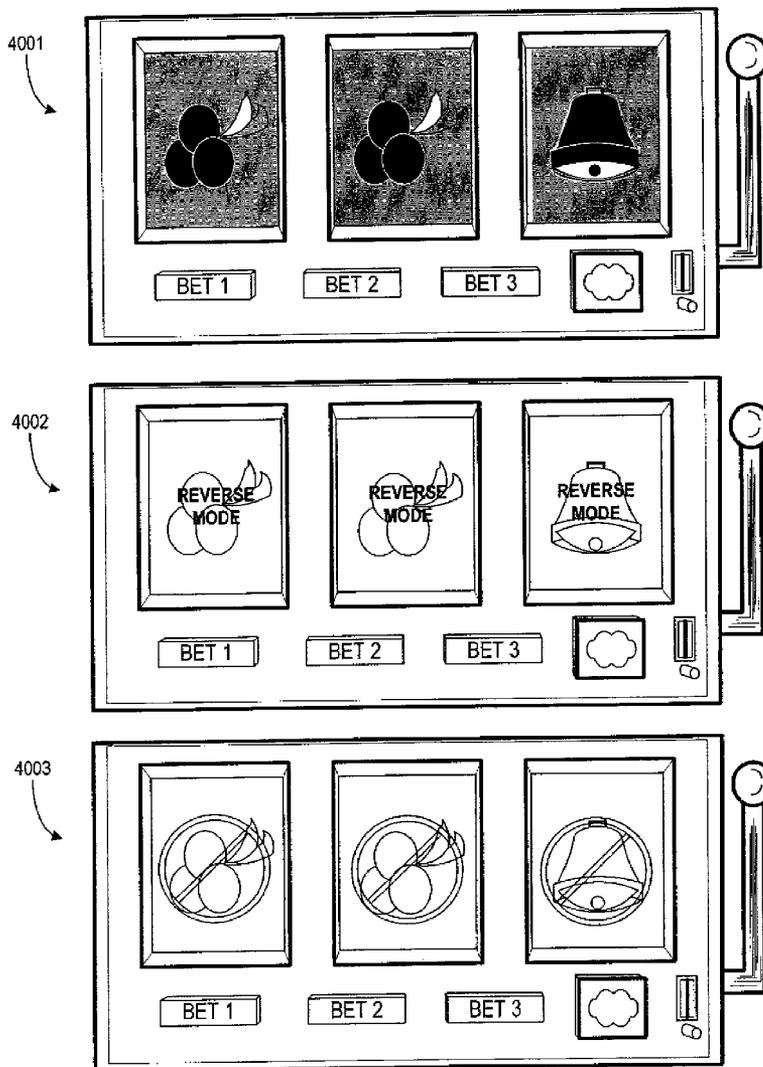
In accordance with one or more embodiments, a method for facilitating play of a gaming device is presented, in which the method comprises enabling a reverse payout mode of play of the gaming device and displaying an indication that play of the gaming device is to be provided in accordance with the reverse payout mode of play. In some embodiments, the indication may include a display on an overlay device. In some embodiments, the indication may include a display on or over at least one reel (electronic, mechanical, or otherwise) of a slot machine.

(21) Appl. No.: **11/424,908**

(22) Filed: **Jun. 19, 2006**

Related U.S. Application Data

(63) Continuation of application No. 10/420,037, filed on Apr. 21, 2003.



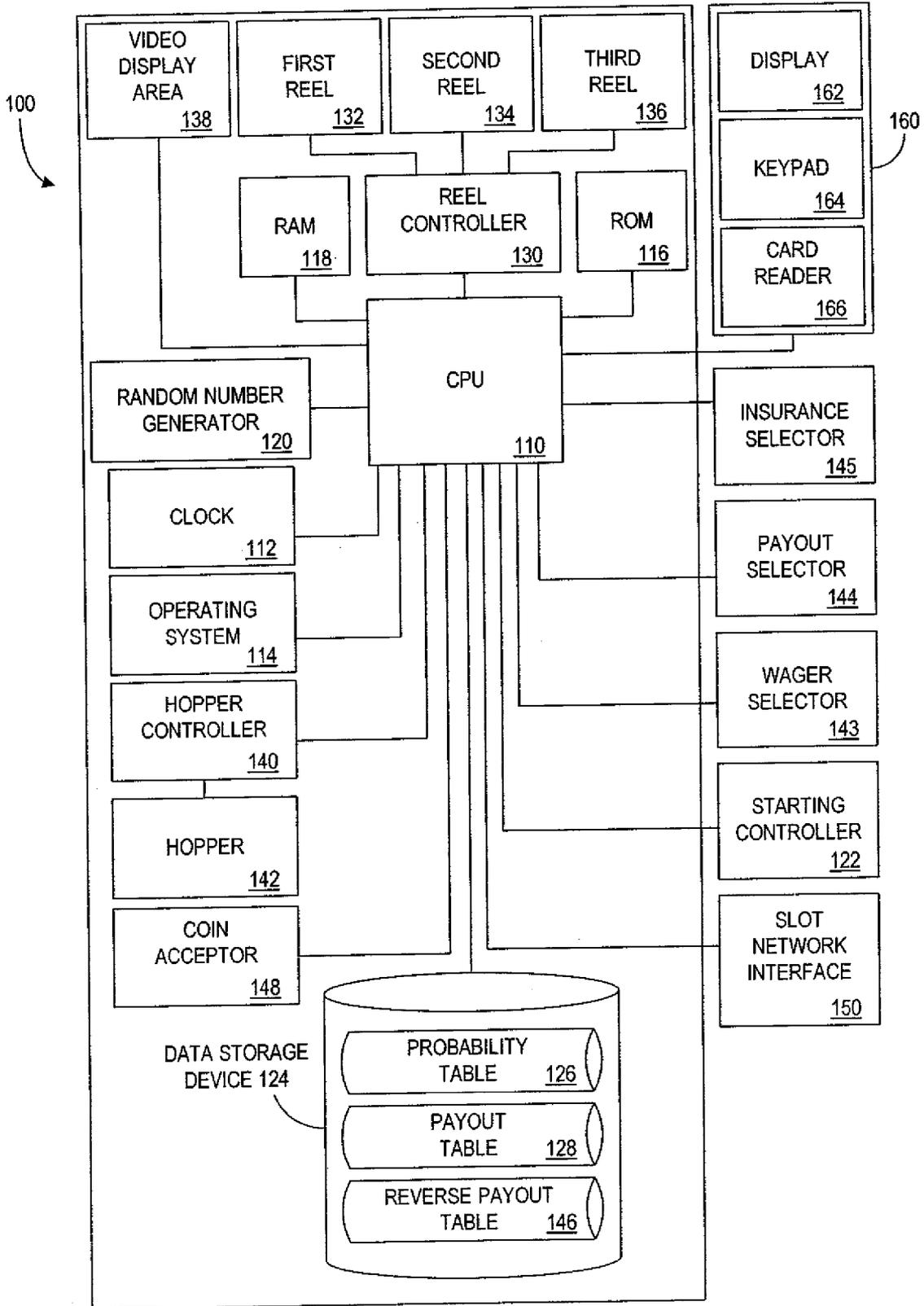


FIG. 1

128A

RANDOM NUMBER 230	REEL 1 232	REEL 2 234	REEL 3 236	PAY COMBINATION 238	NUMBER OF COINS AWARDED 240	PLAYER WIN / LOSS 242
00001	7	7	7	7 / 7 / 7	100	99
00002	7	7	BAR	OTHER	0	-1
00003	7	7	CHERRY	ANY / ANY / CHERRY	2	1
00004	7	7	ORANGE	OTHER	0	-1
00005	7	BAR	BAR	OTHER	0	-1
00006	7	BAR	CHERRY	ANY / ANY / CHERRY	2	1
⋮	⋮	⋮	⋮	⋮	⋮	⋮
00112	BAR	BAR	BAR	BAR / BAR / BAR	50	49
00113	BAR	BELL	BELL	OTHER	0	-1
00114	BAR	BELL	CHERRY	ANY / ANY / CHERRY	2	1
00115	BAR	BELL	ORANGE	OTHER	0	-1
00116	BAR	BELL	PLUM	OTHER	0	-1
00117	BAR	PLUM	PLUM	BAR / PLUM / PLUM	14	13
⋮	⋮	⋮	⋮	⋮	⋮	⋮
03456	BELL	BELL	BELL	BELL / BELL / BELL	20	19
03457	BELL	BELL	CHERRY	ANY / ANY / CHERRY	2	1
03458	BELL	BELL	ORANGE	OTHER	0	-1
03459	BELL	BELL	PLUM	OTHER	0	-1
⋮	⋮	⋮	⋮	⋮	⋮	⋮
10647	ORANGE	ORANGE	ORANGE	ORANGE / ORANGE / ORANGE	20	19
10648	ORANGE	ORANGE	BAR	ORANGE / ORANGE / BAR	10	9

FIG. 2A

128B

PAY COMBINATION <u>210</u>	NUMBER OF COINS AWARDED <u>212</u>	EXPECTED HITS <u>214</u>	PLAYER WIN/LOSS <u>216</u>	EXPECTED HITS (X) WIN/LOSS <u>218</u>
CHERRY / ANY / ANY	2	680	1	680
ANY / ANY / CHERRY	2	680	1	680
CHERRY / CHERRY / ANY	5	200	4	800
ANY / CHERRY / CHERRY	5	200	4	800
CHERRY / ANY / CHERRY	5	68	4	272
CHERRY / CHERRY / CHERRY	20	20	19	380
BAR / ORANGE / ORANGE	10	42	9	378
ORANGE / ORANGE / BAR	10	6	9	54
ORANGE / ORANGE / ORANGE	20	42	19	798
BAR / PLUM / PLUM	14	20	13	260
PLUM / PLUM / BAR	14	5	13	65
PLUM / PLUM / PLUM	20	50	19	950
BAR / BELL / BELL	18	4	17	68
BELL / BELL / BAR	18	20	17	340
BELL / BELL / BELL	20	20	19	380
BAR / BAR / BAR	50	20	49	980
7 / 7 / 7	100	1	99	99
OTHER	0	8,570	-1	-8,570

FIG. 2B

128C

PAY COMBINATION <u>220</u>	NUMBER OF COINS AWARDED <u>222</u>	EXPECTED HITS <u>224</u>	PLAYER WIN / LOSS <u>226</u>	EXPECTED HITS (X) WIN / LOSS <u>228</u>
CHERRY / ANY / ANY	1	680	1	680
ANY / ANY / CHERRY	1	680	1	680
CHERRY / CHERRY / ANY	4	200	4	800
ANY / CHERRY / CHERRY	4	200	4	800
CHERRY / ANY / CHERRY	4	68	4	272
CHERRY / CHERRY / CHERRY	19	20	19	380
BAR / ORANGE / ORANGE	9	42	9	378
ORANGE / ORANGE / BAR	9	6	9	54
ORANGE / ORANGE / ORANGE	19	42	19	798
BAR / PLUM / PLUM	13	20	13	260
PLUM / PLUM / BAR	13	5	13	65
PLUM / PLUM / PLUM	19	50	19	950
BAR / BELL / BELL	17	4	17	68
BELL / BELL / BAR	17	20	17	340
BELL / BELL / BELL	19	20	19	380
BAR / BAR / BAR	49	20	49	980
7 / 7 / 7	99	1	99	99
OTHER	-1	8,570	-1	-8,570

FIG. 2C

146A

PAY COMBINATION 310	NUMBER OF COINS AWARDED 312	EXPECTED HITS 314	PLAYER WIN / LOSS 316	EXPECTED HITS (X) WIN / LOSS 318
CHERRY / ANY / ANY	0	680	-1	-680
ANY / ANY / CHERRY	0	680	-1	-680
CHERRY / CHERRY / ANY	0	200	-4	-800
ANY / CHERRY / CHERRY	0	200	-4	-800
CHERRY / ANY / CHERRY	0	68	-4	-272
CHERRY / CHERRY / CHERRY	0	20	-19	-380
BAR / ORANGE / ORANGE	0	42	-9	-378
ORANGE / ORANGE / BAR	0	6	-9	-54
ORANGE / ORANGE / ORANGE	0	42	-19	-798
BAR / PLUM / PLUM	0	20	-13	-260
PLUM / PLUM / BAR	0	5	-13	-65
PLUM / PLUM / PLUM	0	50	-19	-950
BAR / BELL / BELL	0	4	-17	-68
BELL / BELL / BAR	0	20	-17	-340
BELL / BELL / BELL	0	20	-19	-380
BAR / BAR / BAR	0	20	-49	-980
7 / 7 / 7	0	1	-99	-99
OTHER	1	8,570	-1	8,570

FIG. 3A

146B

PAY COMBINATION <u>320</u>	NUMBER OF COINS AWARDED <u>322</u>	EXPECTED HITS <u>324</u>	PLAYER WIN / LOSS <u>326</u>	EXPECTED HITS (X) WIN / LOSS <u>328</u>
CHERRY / ANY / ANY	98	680	-1	-680
ANY / ANY / CHERRY	98	680	-1	-680
CHERRY / CHERRY / ANY	95	200	-4	-800
ANY / CHERRY / CHERRY	95	200	-4	-800
CHERRY / ANY / CHERRY	95	68	-4	-272
CHERRY / CHERRY / CHERRY	80	20	-19	-380
BAR / ORANGE / ORANGE	90	42	-9	-378
ORANGE / ORANGE / BAR	90	6	-9	-54
ORANGE / ORANGE / ORANGE	80	42	-19	-798
BAR / PLUM / PLUM	86	20	-13	-260
PLUM / PLUM / BAR	86	5	-13	-65
PLUM / PLUM / PLUM	82	50	-19	-950
BAR / BELL / BELL	82	4	-17	-68
BELL / BELL / BAR	82	20	-17	-340
BELL / BELL / BELL	80	20	-19	-380
BAR / BAR / BAR	50	20	-49	-980
7 / 7 / 7	0	1	-99	-99
OTHER	100	8,570	1	8,570

FIG. 3B

146C

PAY COMBINATION <u>330</u>	NUMBER OF COINS AWARDED <u>332</u>	EXPECTED HITS <u>334</u>	PLAYER WIN / LOSS <u>336</u>	EXPECTED HITS (X) WIN / LOSS <u>338</u>
CHERRY / ANY / ANY	0	680	-5	-3,400
ANY / ANY / CHERRY	0	680	-5	-3,400
CHERRY / CHERRY / ANY	0	200	-5	-1,000
ANY / CHERRY / CHERRY	0	200	-5	-1,000
CHERRY / ANY / CHERRY	0	68	-5	-340
CHERRY / CHERRY / CHERRY	0	20	-5	-100
BAR / ORANGE / ORANGE	0	42	-5	-210
ORANGE / ORANGE / BAR	0	6	-5	-30
ORANGE / ORANGE / ORANGE	0	42	-5	-210
BAR / PLUM / PLUM	0	20	-5	-100
PLUM / PLUM / BAR	0	5	-5	-25
PLUM / PLUM / PLUM	0	50	-5	-250
BAR / BELL / BELL	0	4	-5	-20
BELL / BELL / BAR	0	20	-5	-100
BELL / BELL / BELL	0	20	-5	-100
BAR / BAR / BAR	0	20	-5	-100
7 / 7 / 7	0	1	-5	-5
OTHER	6	8,570	1	8,570

FIG. 3C

146D

PAY COMBINATION <u>340</u>	NUMBER OF COINS AWARDED <u>342</u>	EXPECTED HITS <u>344</u>	PLAYER WIN / LOSS <u>346</u>	EXPECTED HITS (X) WIN / LOSS <u>348</u>
CHERRY / ANY / ANY	0	680	-5	-3,400
ANY / ANY / CHERRY	0	680	-5	-3,400
CHERRY / CHERRY / ANY	0	200	-5	-1,000
ANY / CHERRY / CHERRY	0	200	-5	-1,000
CHERRY / ANY / CHERRY	0	68	-5	-340
CHERRY / CHERRY / CHERRY	0	20	-5	-100
BAR / ORANGE / ORANGE	0	42	-5	-210
ORANGE / ORANGE / BAR	0	6	-5	-30
ORANGE / ORANGE / ORANGE	0	42	-5	-210
BAR / PLUM / PLUM	0	20	-5	-100
PLUM / PLUM / BAR	0	5	-5	-25
PLUM / PLUM / PLUM	0	50	-5	-250
BAR / BELL / BELL	0	4	-5	-20
BELL / BELL / BAR	0	20	-5	-100
BELL / BELL / BELL	0	20	-5	-100
BAR / BAR / BAR	0	20	-5	-100
7 / 7 / 7	0	1	-5	-5
OTHER	1	8,570	1	8,570

FIG. 3D

400

PAYS LEFT TO RIGHT>	1ST COIN	2ND COIN	3RD COIN	<PAYS RIGHT TO LEFT
7 7 7 BAR BAR BAR BAR BAR BAR BAR BAR BAR Any Pair/ Any/Any/	100	200	600	7 7 7 BAR BAR BAR BAR BAR BAR BAR BAR BAR Any Pair/ Any/Any/
OTHER	0	0	0	OTHER
<u>410</u>	<u>420</u>	<u>430</u>	<u>440</u>	

ALL PAYS ON CENTER LINE

FIG. 4A

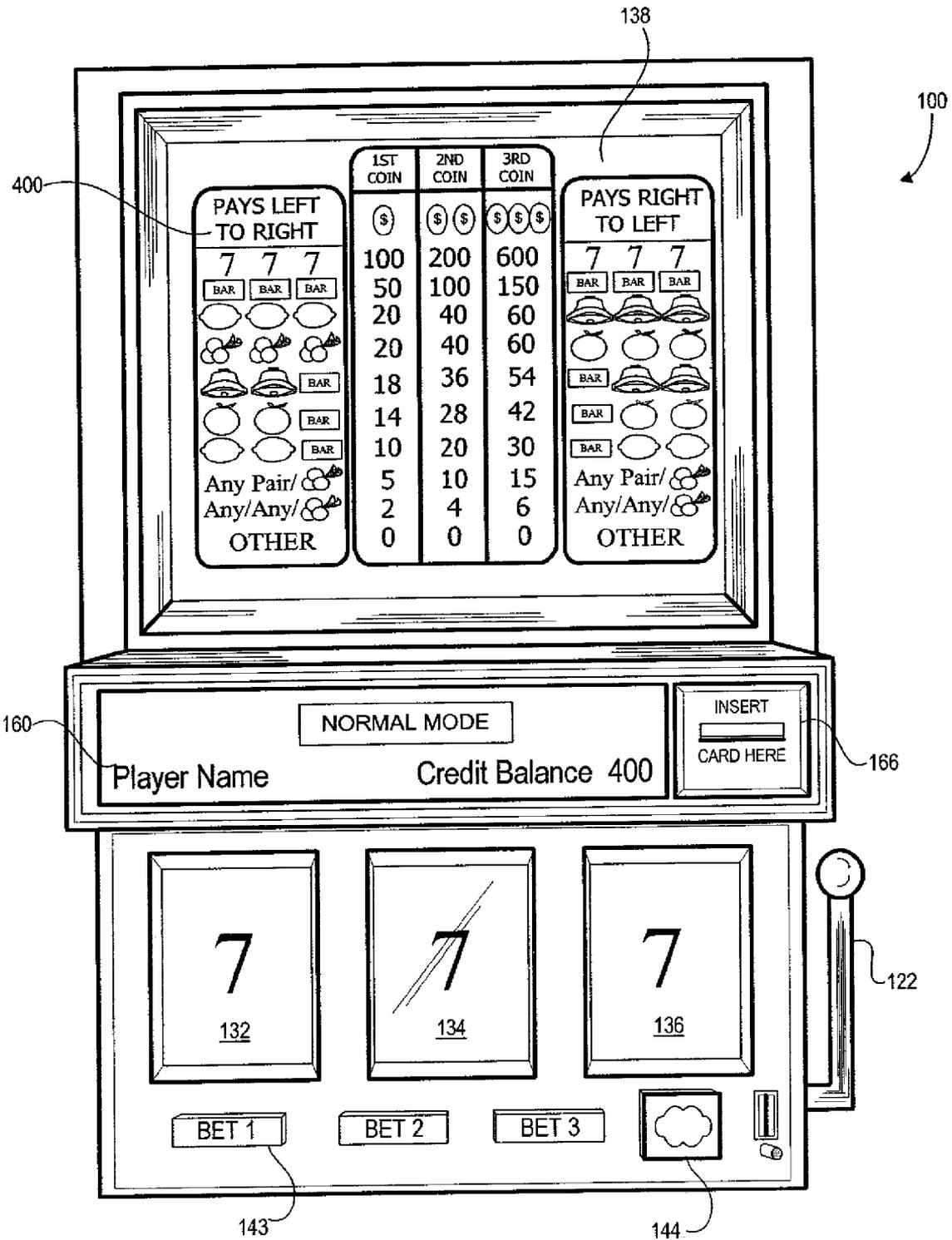


FIG. 4B

401

	5 COINS	10 COINS	15 COINS
PAYS LEFT TO RIGHT > 7 7 7 BAR BAR BAR BAR BAR BAR BAR BAR BAR Any Pair/ Any//Any// OTHER 411	0 0 0 0 0 0 0 0 0 6 421	0 0 0 0 0 0 0 0 0 12 431	0 0 0 0 0 0 0 0 0 18 441

ALL PAYS ON CENTER LINE

FIG. 4C

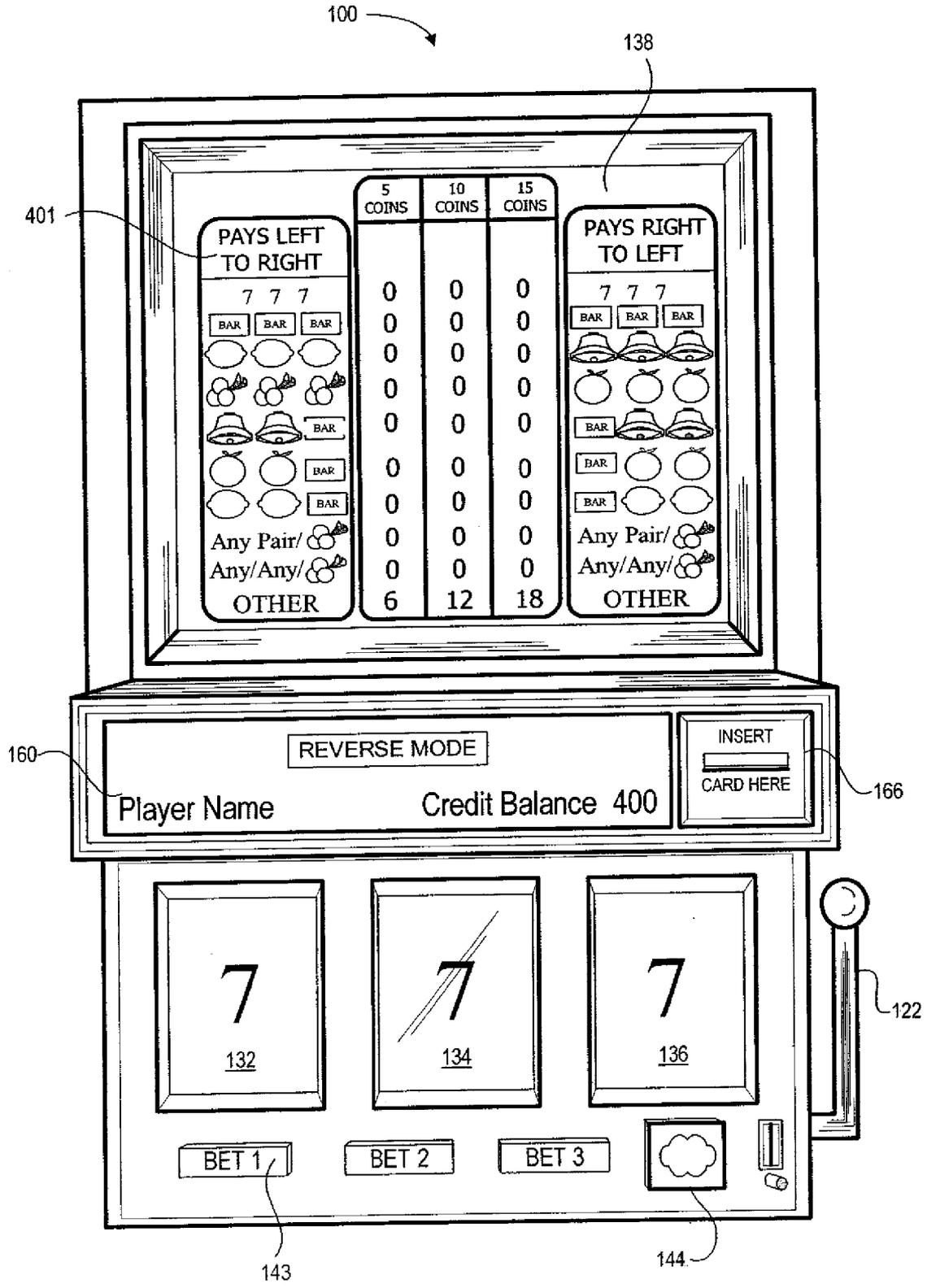


FIG. 4D

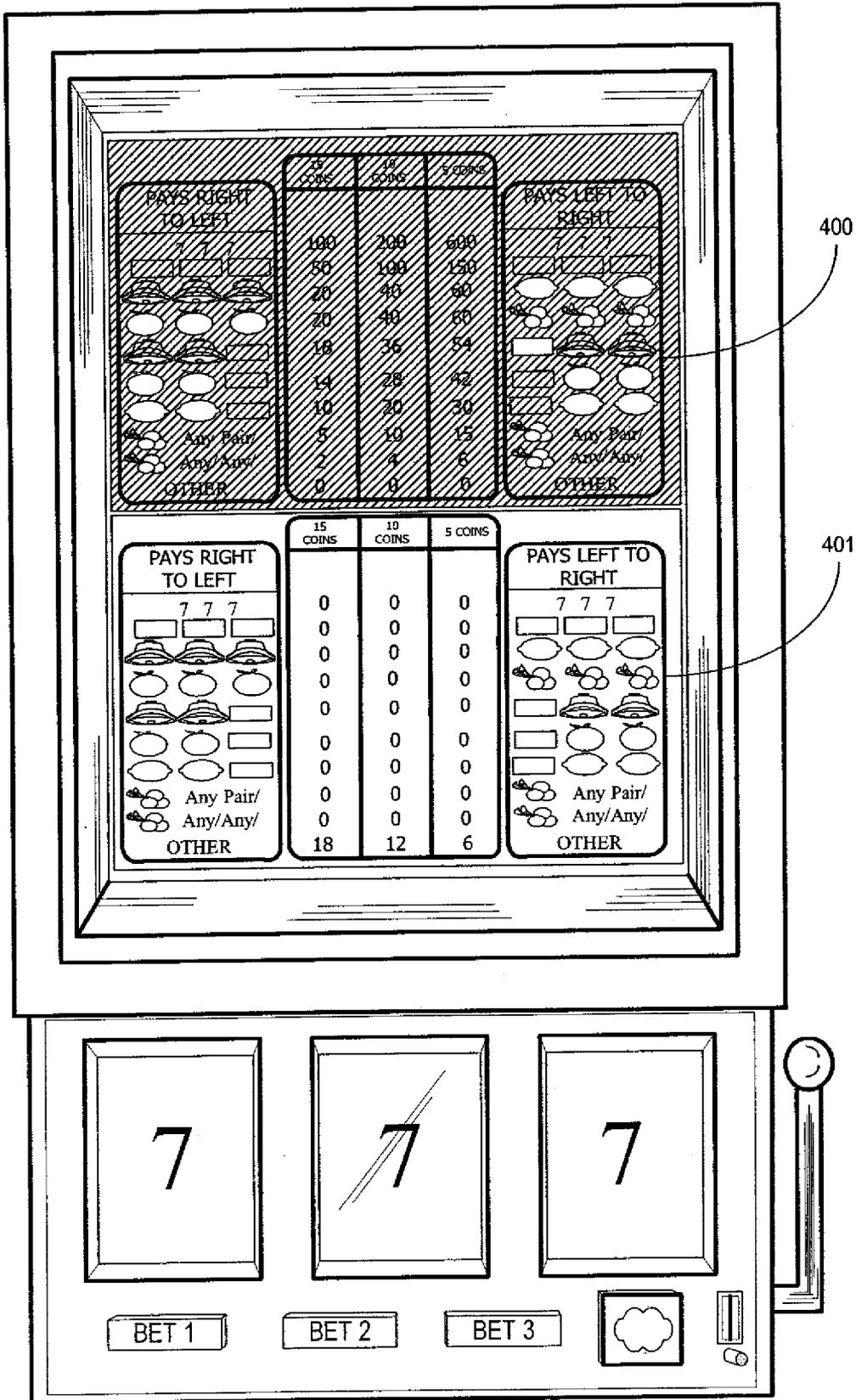


FIG. 4E

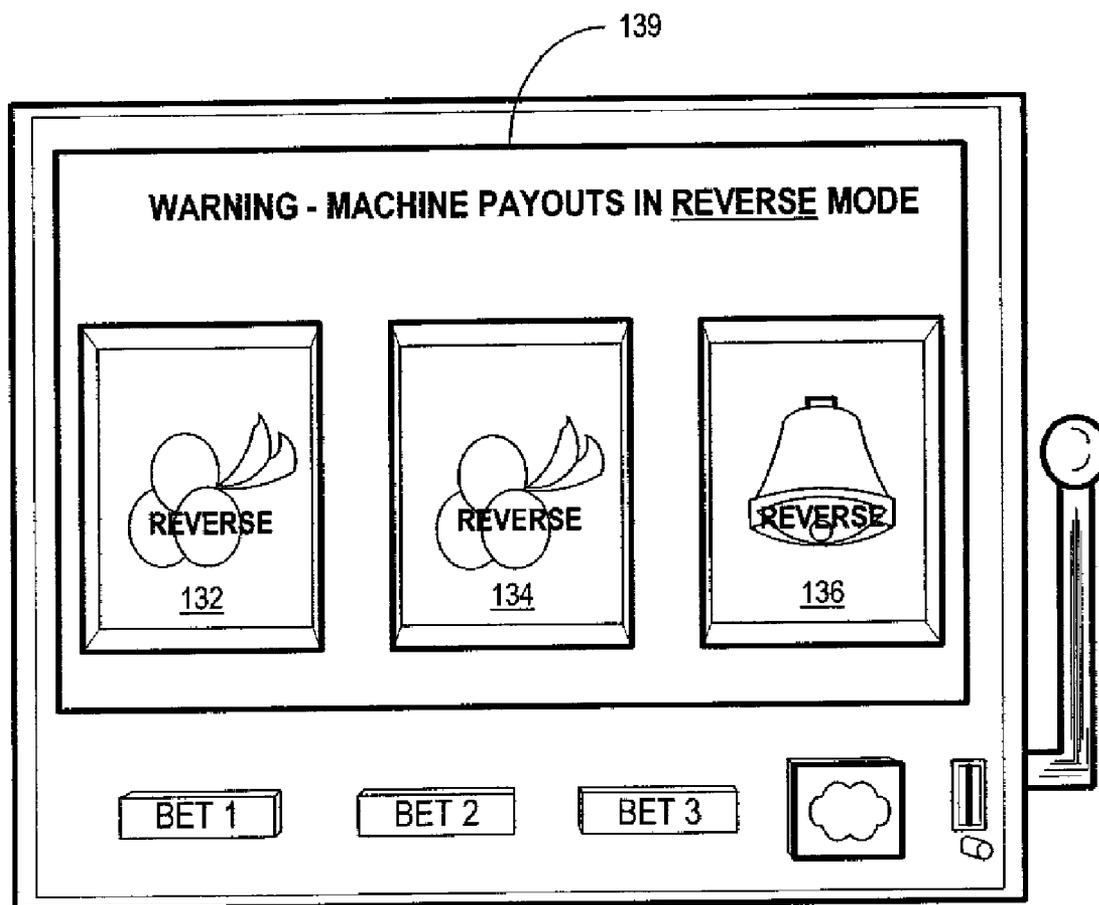


FIG. 4F

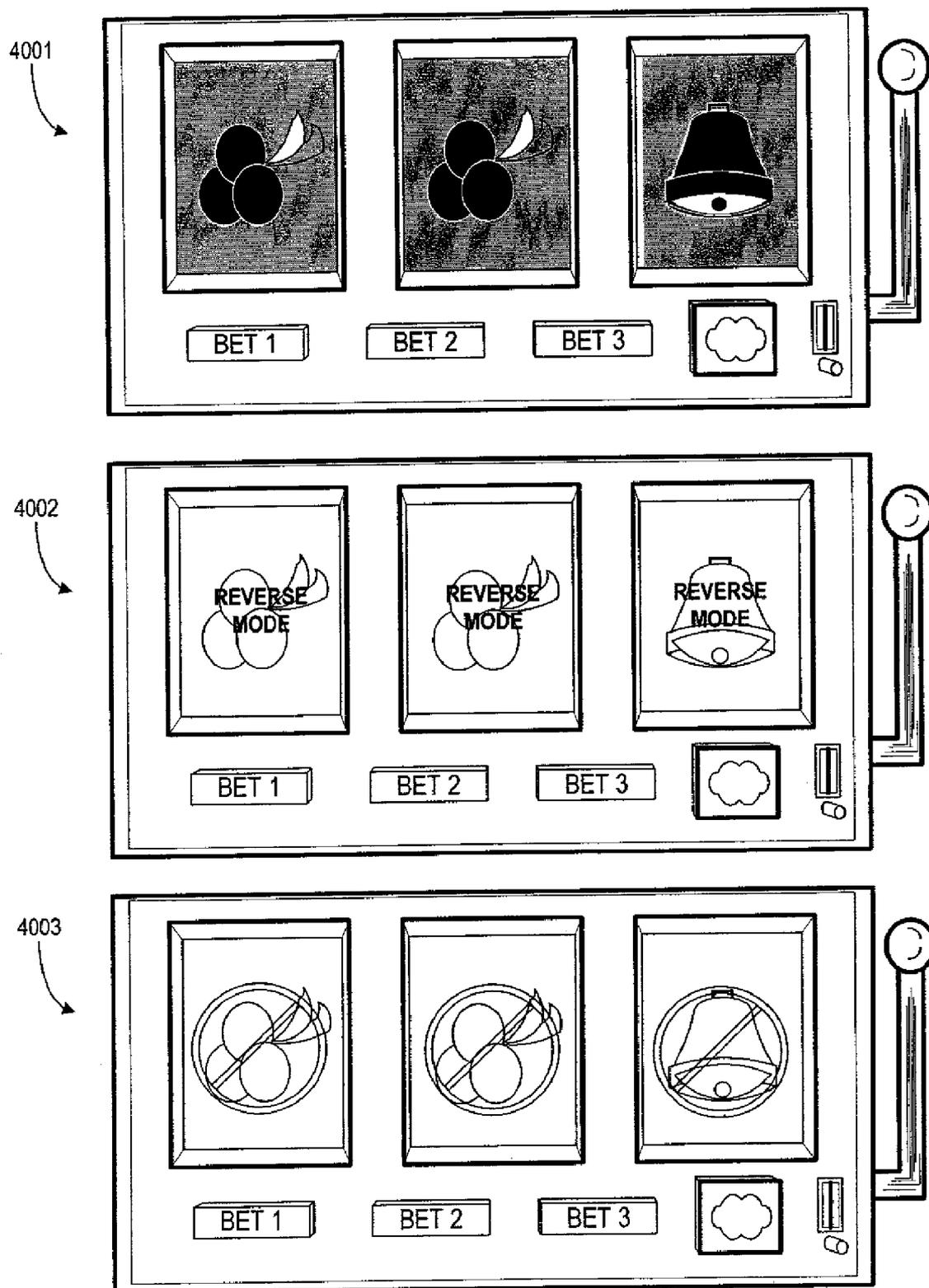


FIG. 4G

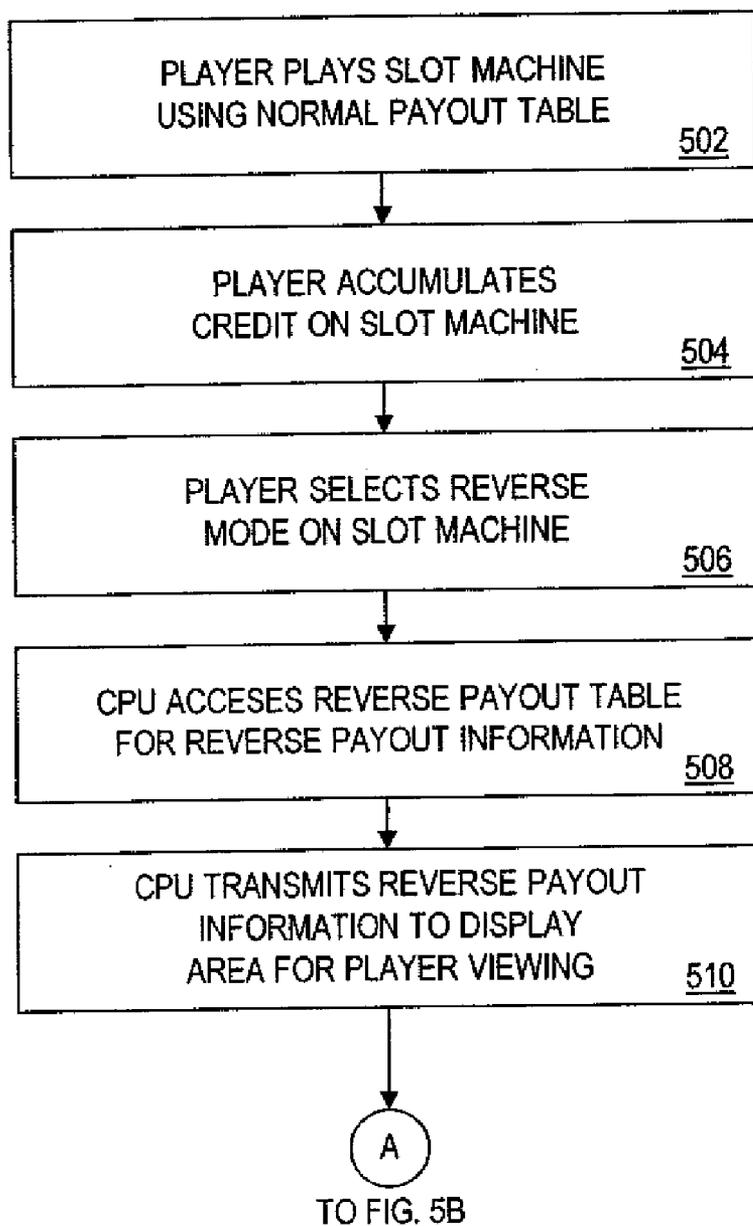


FIG. 5A

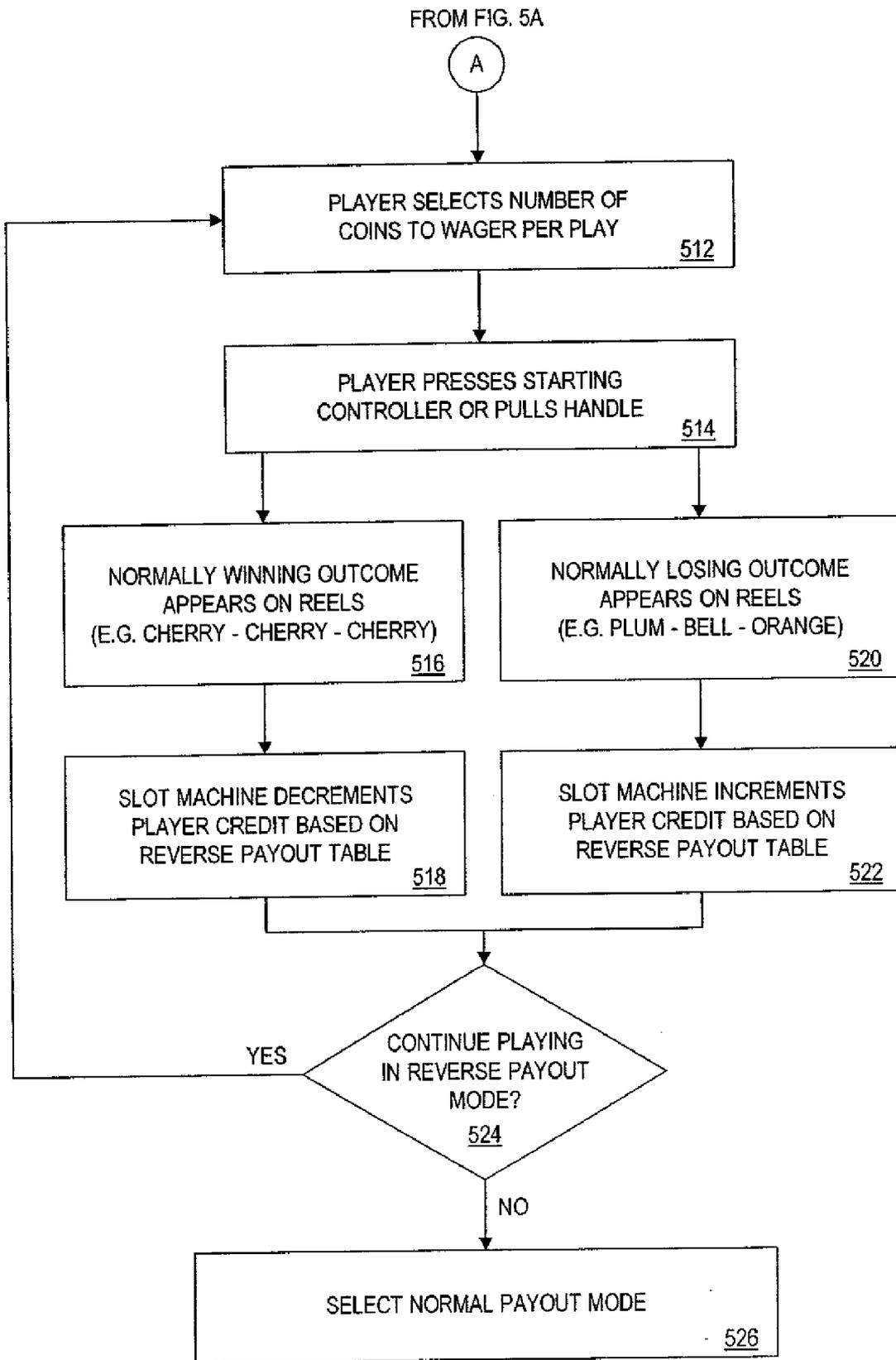


FIG. 5B

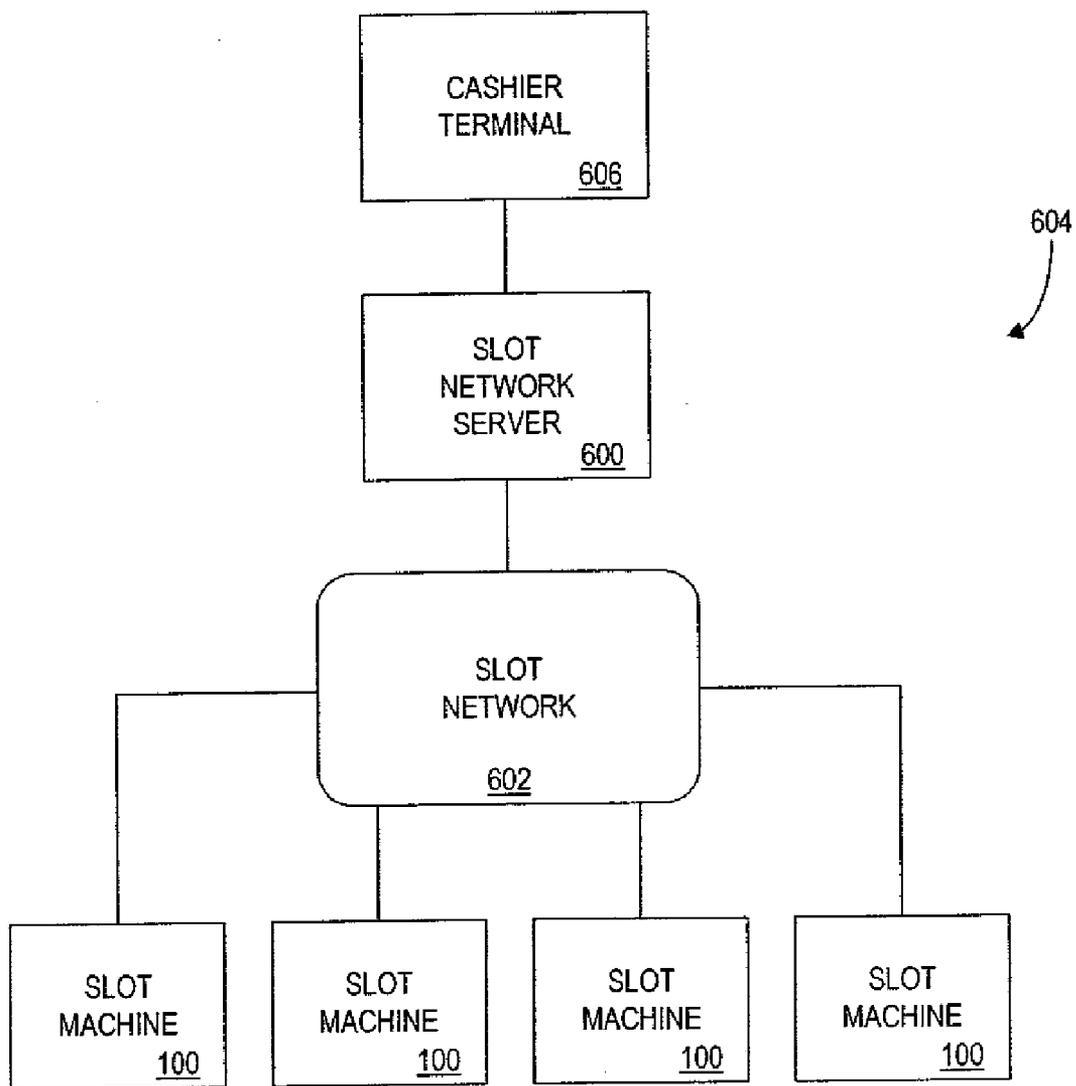


FIG. 6

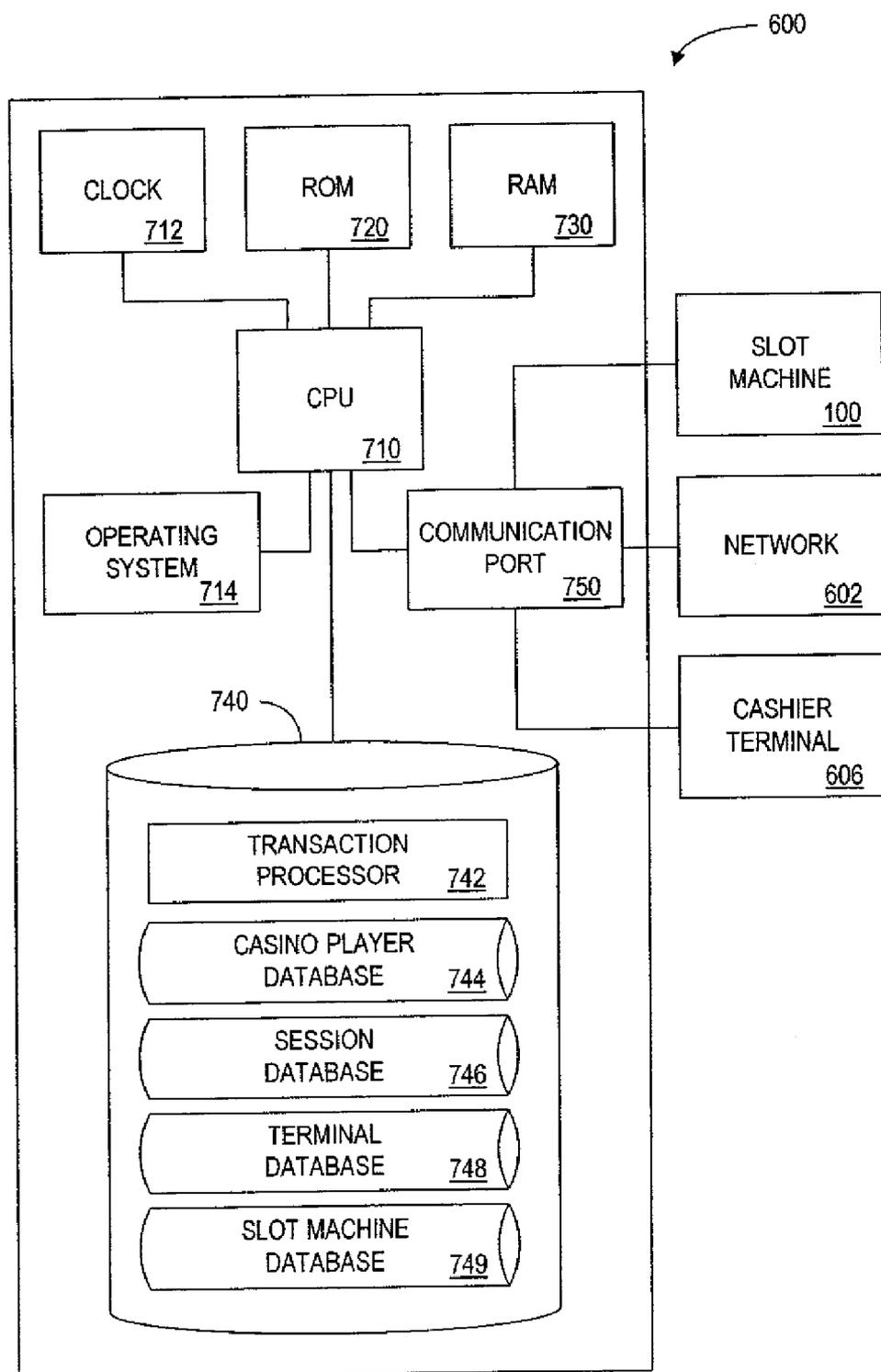


FIG. 7

744

NAME 7440	PLAYER ID NUMBER 7442	ADDRESS 7443	CREDIT CARD NUMBER 7445	CREDIT BALANCE 7446	COMP. INFO 7447	PLAYER STATUS RATING 7449
JOHN SMITH	276948	125 MAIN ST. STAMFORD, CT	1111-2222- 3333-4444	\$100.00	N/A	HIGH ROLLER
HELEN ADAMS	285457	33 STATE ST. WATERBURY, CT	9999-8888- 7777-6666	\$25.00	NONE	NOVICE
CHRIS SMITH	354496	44 OCEAN DR. ATLANTIC CITY, NJ	2222-4444- 6666-8888	\$65.00	N/A	HIGH ROLLER

FIG. 8

749



MACHINE ID NUMBER 7491	PLAYER ID NUMBER 7492	WIN / LOSS 7494	AMOUNT WAGERED 7497	PAYOUT MODE 7498	PAYOUT TABLE IDENTIFIER 7499
423	276948	+1	5	REVERSE	RAM
424	294623	-5	5	REVERSE	DSD 1-1
425	287654	+5	5	REVERSE	DSD 1-1

FIG. 9

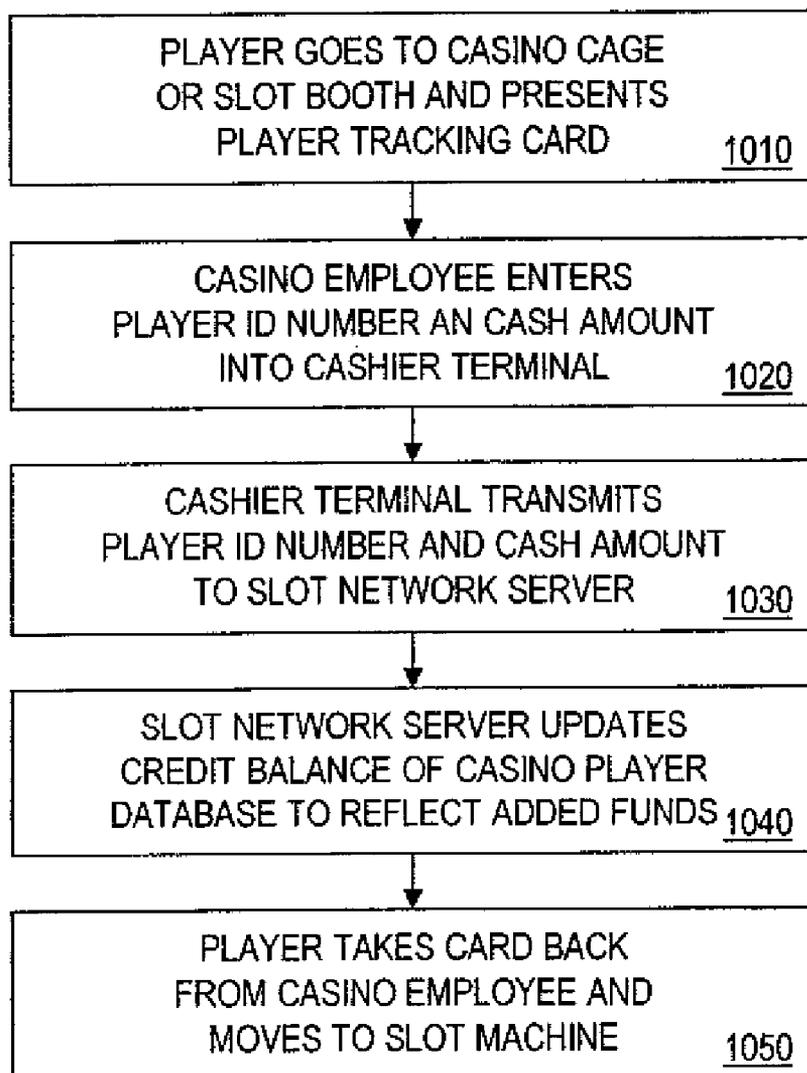


FIG. 10

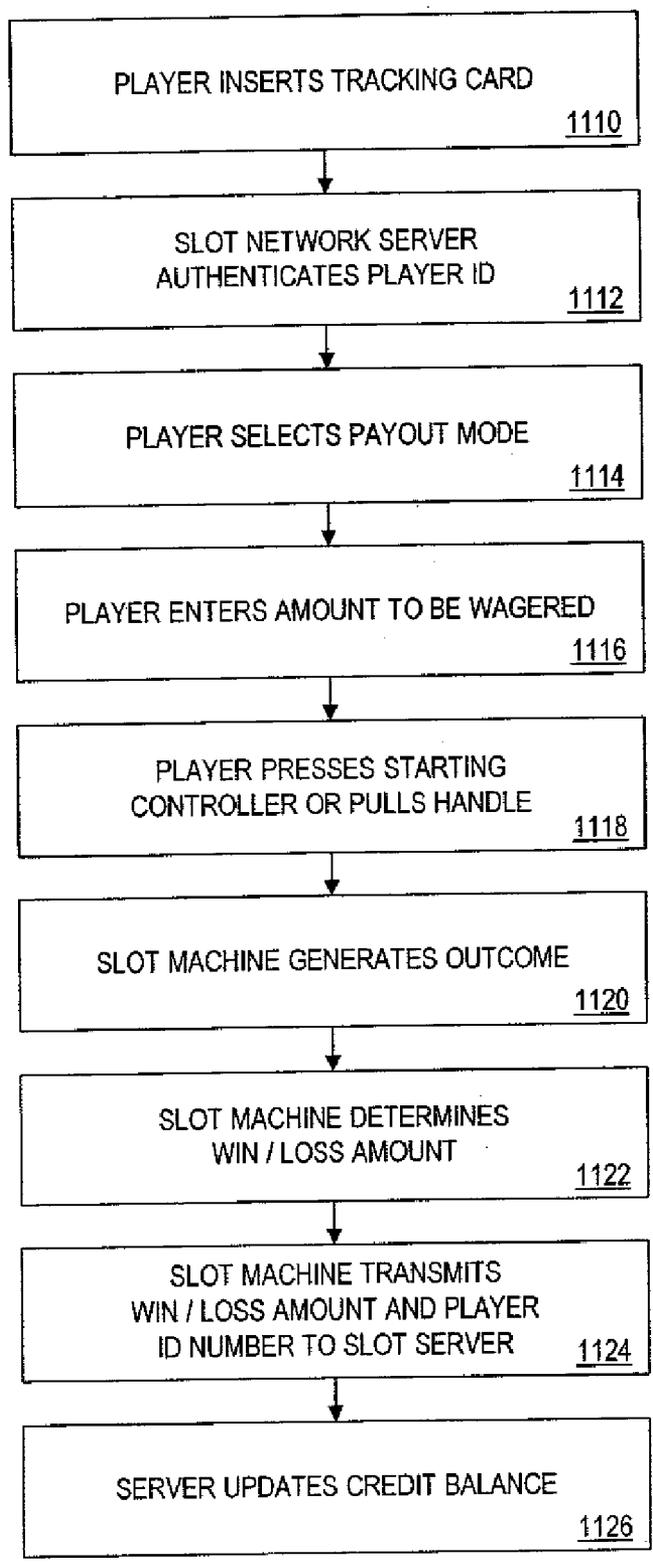


FIG. 11

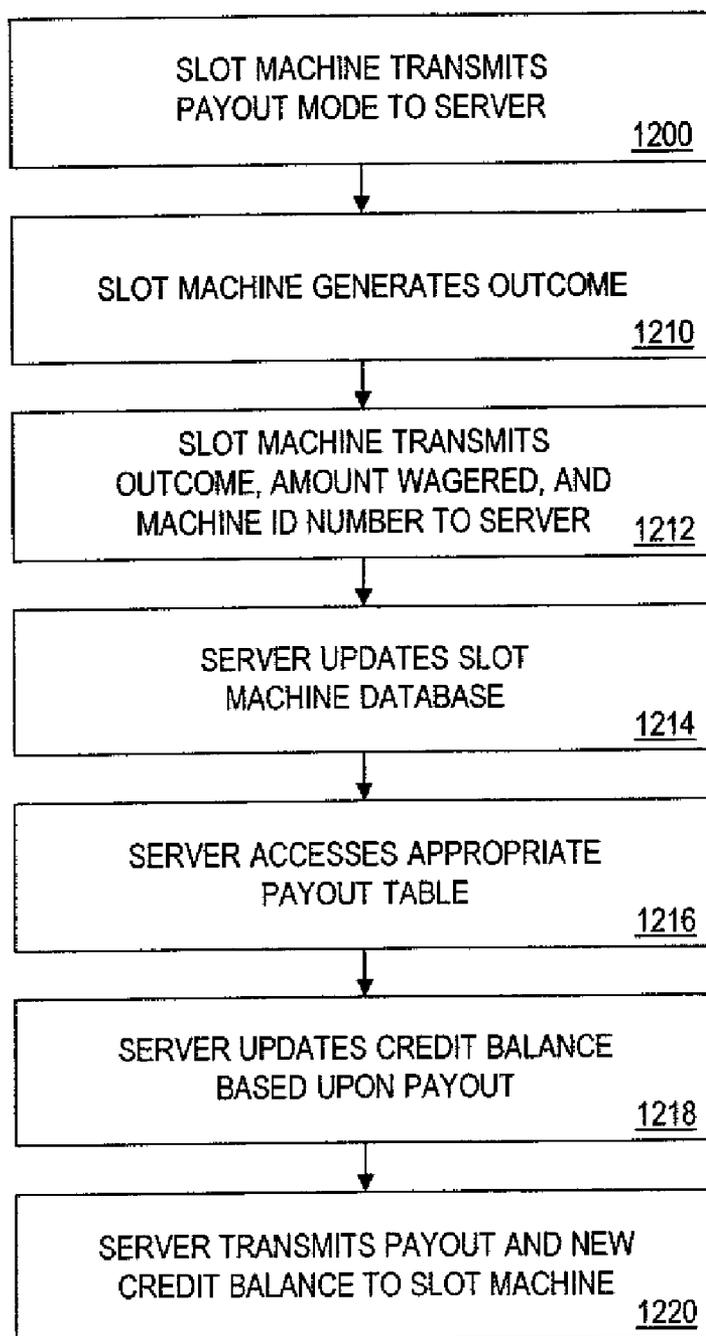


FIG. 12

1300

PAY COMBINATION <u>1310</u>	NUMBER OF COINS AWARDED <u>1320</u>	EXPECTED HITS <u>1330</u>	PLAYER WIN / LOSS <u>1340</u>	EXPECTED HITS (X) WIN / LOSS <u>1350</u>
CHERRY / ANY / ANY	0	680	-1	-680
ANY / ANY / CHERRY	0	680	-1	-680
CHERRY / CHERRY / ANY	0	200	-4	-800
ANY / CHERRY / CHERRY	0	200	-4	-800
CHERRY / ANY / CHERRY	0	68	-4	-272
CHERRY / CHERRY / CHERRY	0	20	-19	-380
BAR / ORANGE / ORANGE	0	42	-9	-378
ORANGE / ORANGE / BAR	0	6	-9	-54
ORANGE / ORANGE / ORANGE	0	42	-19	-798
BAR / PLUM / PLUM	0	20	-13	-260
PLUM / PLUM / BAR	0	5	-13	-65
PLUM / PLUM / PLUM	0	50	-19	-950
BAR / BELL / BELL	0	4	-17	-68
BELL / BELL / BAR	0	20	-17	-340
BELL / BELL / BELL	0	20	-19	-380
BAR / BAR / BAR	0	20	-49	-980
7 / 7 / 7	99	1	99	99
OTHER	1	8,570	1	8,570

FIG. 13A

1300B

PAY COMBINATION <u>1360</u>	NUMBER OF COINS AWARDED <u>1370</u>	EXPECTED HITS <u>1380</u>	PLAYER WIN / LOSS <u>1390</u>	EXPECTED HITS (X) WIN / LOSS <u>1395</u>
CHERRY / ANY / ANY	98	680	-1	-680
ANY / ANY / CHERRY	98	680	-1	-680
CHERRY / CHERRY / ANY	95	200	-4	-800
ANY / CHERRY / CHERRY	95	200	-4	-800
CHERRY / ANY / CHERRY	95	68	-4	-272
CHERRY / CHERRY / CHERRY	80	20	-19	-380
BAR / ORANGE / ORANGE	90	42	-9	-378
ORANGE / ORANGE / BAR	90	6	-9	-54
ORANGE / ORANGE / ORANGE	80	42	-19	-798
BAR / PLUM / PLUM	86	20	-13	-260
PLUM / PLUM / BAR	86	5	-13	-65
PLUM / PLUM / PLUM	80	50	-19	-950
BAR / BELL / BELL	82	4	-17	-68
BELL / BELL / BAR	82	20	-17	-340
BELL / BELL / BELL	80	20	-19	-380
BAR / BAR / BAR	50	20	-49	-980
7 / 7 / 7	198	1	99	-99
OTHER	100	8,570	1	8,570

FIG. 13B

400

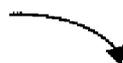
POSSIBLE FINAL HANDS	PAYOUT
ROYAL FLUSH	\$800
STRAIGHT FLUSH	\$50
FOUR OF A KIND	\$25
FULL HOUSE	\$9
FLUSH	\$6
STRAIGHT	\$4
THREE OF A KIND	\$3
TWO PAIR	\$2
PAIR JACKS OR BETTER	\$1
TENS OR LOWER	\$0

FIG. 14

401

POSSIBLE FINAL HANDS	PAYOUT
ROYAL FLUSH	\$0
STRAIGHT FLUSH	\$0
FOUR OF A KIND	\$0
FULL HOUSE	\$0
FLUSH	\$0
STRAIGHT	\$0
THREE OF A KIND	\$0
TWO PAIR	\$0
PAIR JACKS OR BETTER	\$0
TENS OR LOWER	\$6

FIG. 15A

401 

POSSIBLE FINAL HANDS	PAYOUT
5 - 4 - 3 - 2 - A	\$100
6 - 4 - 3 - 2 - A	\$50
7 HIGH	\$20
8 HIGH	\$5
9 HIGH	\$2
ALL OTHER HANDS	\$0

FIG. 15B

1600

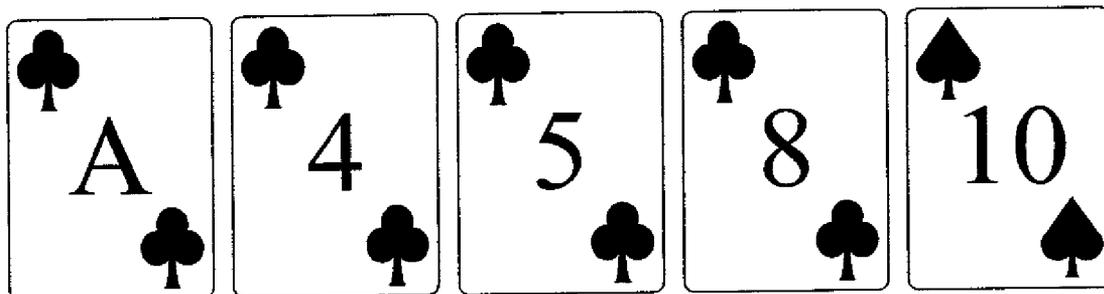


FIG. 16

1700

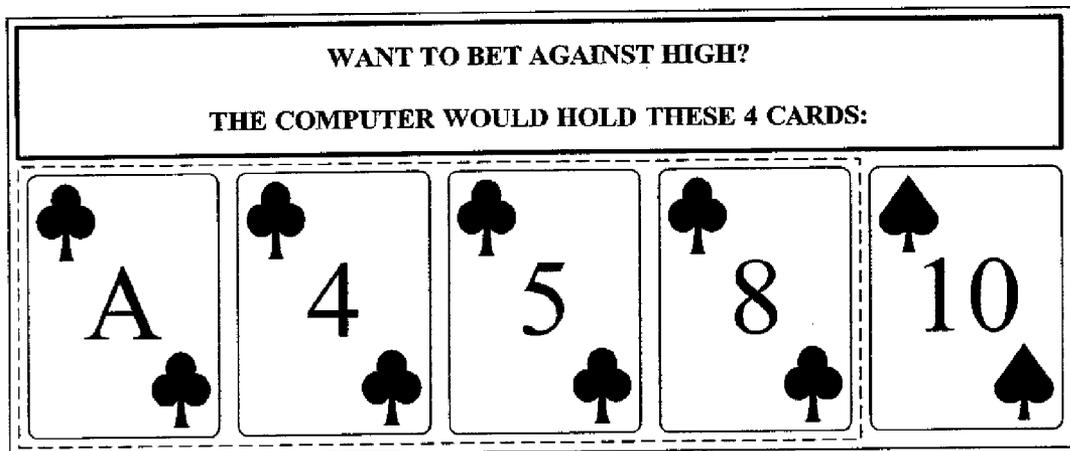


FIG. 17

1800

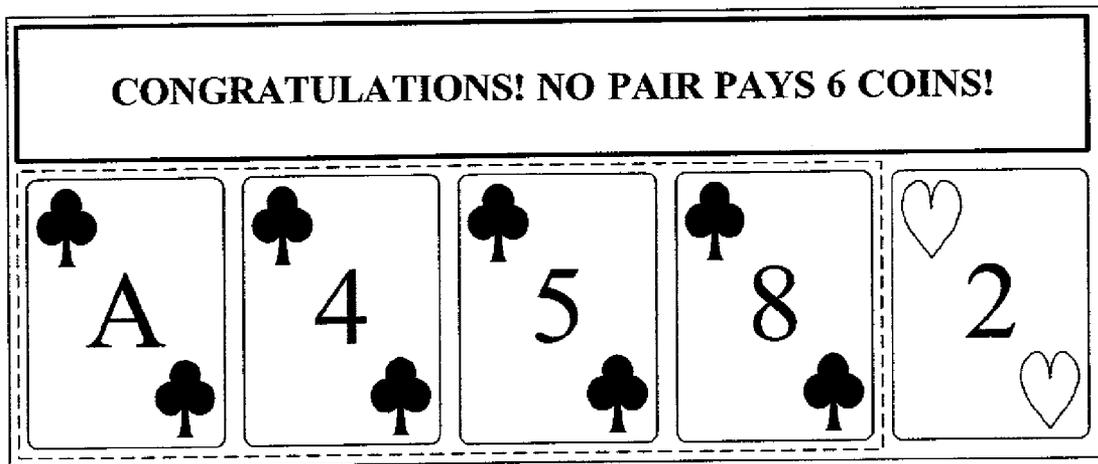


FIG. 18

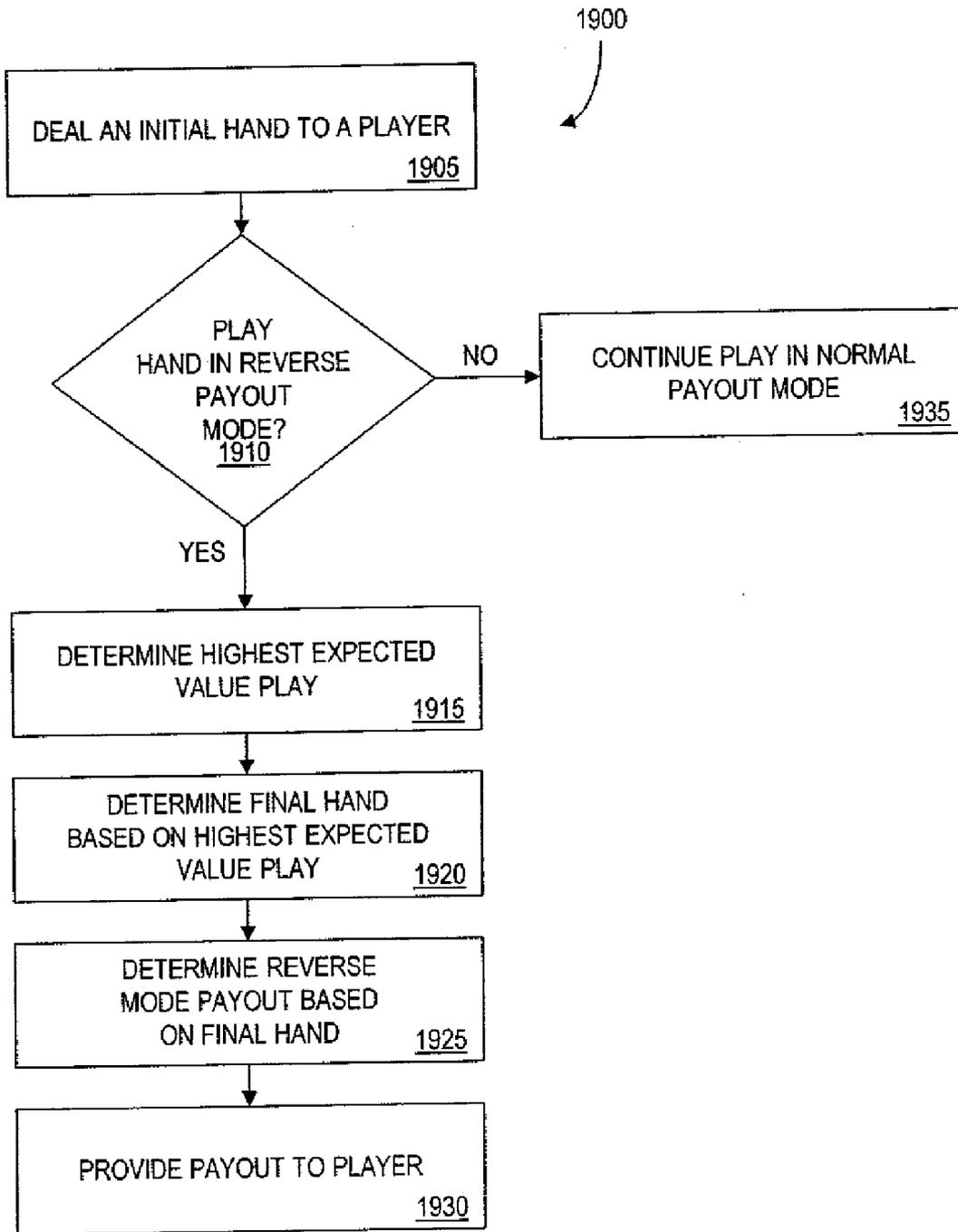


FIG. 19

SYSTEMS AND METHODS FOR FACILITATING PLAY USING REVERSED PAYOUT TABLES

[0001] This application claims priority from U.S. Provisional Patent Application Ser. No. 60/374,384, filed Apr. 19, 2002, entitled "GAMING DEVICE METHODS AND APPARATUS EMPLOYING REVERSED PAYOUT TABLES", the content of which is hereby incorporated by reference herein in its entirety.

CROSS-REFERENCE TO RELATED U.S. APPLICATIONS

[0002] The present Application is related to commonly-owned, co-pending U.S. Reissue Application Ser. No. 10/222,523, filed Aug. 16, 2002, entitled "A GAMING DEVICE FOR OPERATING IN A REVERSE PAYOUT MODE AND A METHOD OF OPERATING SAME", the entirety of which is incorporated by reference herein for all purposes.

FIELD OF THE INVENTION

[0003] The present invention relates generally to a method and apparatus for operation of a gaming device.

BACKGROUND OF THE INVENTION

[0004] Game machines (e.g., reeled slot machines or video poker machines) generate more than \$15 billion per year in revenue for casinos in the United States alone. This figure accounts for more than half of the gaming revenue for a typical United States casino. The situation is similar in other countries in which game machines are popular, such as Australia. Accordingly, casinos and other operators of game machines are interested in promoting the use of game machines in order to maintain or increase revenues.

[0005] When a player feels unlucky and perceives the odds of winning to be low, the player may stop playing a gaming device or, even more troubling to the owner or operator of the gaming devices, travel to another casino where he perceives his odds of winning to be better. Commonly-owned, co-pending U.S. Reissue Application Ser. No. 10/222,523, filed Aug. 16, 2002, entitled "A GAMING DEVICE FOR OPERATING IN A REVERSE PAYOUT MODE AND A METHOD OF OPERATING SAME", provides various methods and apparatus for allowing play of a gaming device that is operable to determine payouts according to an alternate, or reverse, payout table.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] FIG. 1 is a schematic view of a slot machine according to one or more embodiments the present invention.

[0007] FIG. 2a is one exemplary representation of a normal payout table according to one or more embodiments the present invention.

[0008] FIG. 2b is one exemplary representation of a normal payout table according to one or more embodiments of the present invention.

[0009] FIG. 2c is one exemplary representation of a normal payout table according to one or more embodiments of the present invention.

[0010] FIG. 3a is an exemplary representation of a reverse payout table according to one or more embodiments of the present invention.

[0011] FIG. 3b is an exemplary representation of a reverse payout table according to one or more embodiments of the present invention.

[0012] FIG. 3c is an exemplary representation of a reverse payout table according to one or more embodiments of the present invention.

[0013] FIG. 3d is an exemplary representation of a reverse payout table according to one or more embodiments of the present invention.

[0014] FIG. 4a is an exemplary display of a normal payout table according to one or more embodiments of the present invention.

[0015] FIG. 4b is a plan view of an exemplary normal payout table enabled slot machine according to one or more embodiments of the present invention.

[0016] FIG. 4c is an exemplary display of a reverse payout table according to one or more embodiments of the present invention.

[0017] FIG. 4d is a plan view of an exemplary reverse payout table enabled slot machine according to one or more embodiments of the present invention.

[0018] FIG. 4e is a plan view of an exemplary reverse payout table enabled slot machine according to one or more embodiments of the present invention.

[0019] FIG. 4f is a plan view of an exemplary reverse payout table enabled slot machine according to one or more embodiments of the present invention.

[0020] FIG. 4g is a plan view of an exemplary reverse payout table enabled slot machine according to one or more embodiments of the present invention.

[0021] FIGS. 5a and 5b are flow diagrams depicting an exemplary process according to one or more embodiments of the present invention.

[0022] FIG. 6 is an overall schematic view of a system according to one or more embodiments of the present invention, including a slot machine, a slot network server, and a cashier terminal.

[0023] FIG. 7 is a schematic view of an exemplary slot network server according to one or more embodiments of the present invention.

[0024] FIG. 8 is an exemplary representation of a casino player database according to one or more embodiments of the present invention.

[0025] FIG. 9 is an exemplary representation of a slot machine database according to one or more embodiments of the present invention.

[0026] FIG. 10 is a flow diagram describing an exemplary process for the depositing of funds according to one or more embodiments of the present invention.

[0027] FIG. 11 is an overall flow diagram of an exemplary process according to one or more embodiments of the present invention.

[0028] FIG. 12 is an overall flow diagram of an exemplary process according to one or more embodiments of the present invention.

[0029] FIG. 13a is an exemplary representation of a reverse payout table according to one or more embodiments of the present invention.

[0030] FIG. 13b is an exemplary representation of a reverse payout table according to one or more embodiments of the present invention.

[0031] FIG. 14 is an exemplary representation of a normal mode payout table for a video poker game according to one or more embodiments of the present invention.

[0032] FIG. 15a is an exemplary representation of a reverse mode payout table for a video poker game according to one or more embodiments of the present invention.

[0033] FIG. 15b is an exemplary representation of a reverse mode payout table for a video poker game according to one or more embodiments of the present invention.

[0034] FIGS. 16-18 depict an example of play of a video poker game in a reverse payout mode according to one or more embodiments of the present invention.

[0035] FIG. 19 is a flow chart representing an exemplary process of one or more embodiments of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0036] The present invention is directed generally to gaming devices such as slot machines or video poker machines, and to various methods and systems for playing such gaming devices.

[0037] Some types of gaming devices are capable of operating in more than one payout mode (e.g., a normal payout mode and a reverse payout mode, a primary mode and a bonus mode). Applicants have recognized that, in some embodiments of the present invention, players of gaming devices may find appealing the ability to select an alternate payout table based on their feeling about the future outcomes to be generated by a gaming device. In addition, Applicants have recognized that a player operating a gaming device may find it appealing that a gaming device is enabled to indicate what mode the gaming device is operating in.

[0038] Applicants have also recognized that, in some embodiments, operators of gaming devices may find it beneficial to provide gaming devices capable of indicating which of various modes they are operating in, as the availability of such information may make the gaming devices more appealing to players. For example, it may be advantageous to enable a gaming device to indicate to a player that the gaming device is operating in a reverse payout mode so that, for example, the player is not confused if an ordinarily winning outcome does not result in a payout to the player (or vice versa). Thus, operators of the subject gaming devices may be able to retain players for a longer period of time.

[0039] The accompanying figures, which are incorporated in and constitute a part of this specification, illustrate some embodiments of the invention, and together with the description serve to explain the principles of some embodi-

ments of the invention. The left most digit(s) of a reference numeral typically identifies the figure in which the reference numeral first appears. Although some of the embodiments discussed herein are directed to slot machines, such as slot machines with video reels and slot machines with physical reels, it is to be understood that the present invention is equally applicable to other gaming devices, such as video poker machines, video blackjack machines, video roulette machines, video keno machines, multi-line machines, video lottery terminals, personal computers (e.g., running Internet gaming applications), video bingo machines, and the like.

[0040] With reference to FIG. 1, the slot machine 100 will now be described in greater detail. Each slot machine 100 includes a Central Processing Unit (CPU) 110, a clock 112, and an operating system 114. The CPU 110 executes instructions of a program stored in Data Storage Device 124 and/or Read Only Memory (ROM) 116 for playing the slot machine 100. The Random Access Memory (RAM) 118 temporarily stores information passed to it by the CPU 110. A Random Number Generator (RNG) 120 is also in communication with the CPU 110.

[0041] The slot machine 100 operates in both a normal payout mode and a reverse payout mode. With respect to the normal payout mode of the slot machine 100, the slot machine 100 operates in a conventional manner. The player starts the machine by inserting a coin into a coin acceptor 148 in communication with the CPU 110, or using electronic credit or a cashless gaming receipt, and activating a starting controller 122. If the player has deposited more than one coin in slot machine 100 or has accumulated credits stored in slot machine 100, then he can choose the desired wager per play by actuating wager selector 143 (e.g., by pressing a "BET MAX" button). Under control of a program stored, for example, in a data storage device 124 or the ROM 116, the CPU 110 initiates the RNG 120 to generate a random number; the CPU 110 then looks up the generated random number in a stored probability table 126 and finds the corresponding outcome. As will be readily apparent to those skilled in the art, the random number may be generated through any of a variety of means, including software means, electronic means, digital means, or through a physical process, such as through the scrambling of ping pong balls in a blower device, as conducted in some lottery games. Although described as random herein, the number generated may be more properly understood as pseudo-random.

[0042] According to one or more embodiments of the present invention, each of the three reels 132, 134, 136 has twenty-two total symbols or "stops" located thereon. Therefore, the three reels 132, 134, 136 provide 10,648 (22×22×22=10,648) possible reel combinations or outcomes. A reel combination of "CHERRY-BELL-PLUM" therefore represents an outcome. Alternatively, a separate random number may be generated for each reel position. These 10,648 plays are often referred to as the slot machine's "cycle." RNG 120 produces random numbers which are mapped onto these 10,648 possible outcomes, each of which has a corresponding outcome stored in probability table 126. While each of these 10,648 possible outcomes may have an equal probability of selection, the present invention may also employ non-uniform probabilities known in the art.

[0043] Based on the corresponding outcome, the CPU 110 locates the appropriate number of coins awarded in normal

payout table **128**. The CPU **110** also directs a reel controller **130** to spin reels **132**, **134**, **136** and to stop them at a point where they display an outcome which corresponds to the randomly generated number. When the player wins, the machine stores the credits in the RAM **118** and displays them in the video display area **138**.

[0044] The possible outcomes of slot machine **100** may be divided into subsets, with each subset representing a different "class" of outcome. Many slot machines, for example, are described as having three subsets or ranges of outcomes, such as high-end payouts, mid-level payouts, and low-end payouts. Non-winning payouts may form a fourth subset. High-end payouts incorporate the top payouts of the machine, such as the top three jackpots. Another way to define the subset of high-end payouts is to include all payouts exceeding a fixed multiplier of the amount wagered, such as all payouts which return at least ten times the number of coins wagered. Low-end payouts typically comprise payouts of only a few coins, such as the payout for a single cherry on either the first or third reels. Those of ordinary skill in the art will appreciate that there could be any number of subsets defined for a given machine.

[0045] A hopper controller **140** is in communication with a hopper **142** for dispensing coins. When the player requests to cash out by pushing a button (not shown) on the slot machine **100**, the CPU **110** checks the RAM **118** to see if the player has any credit and, if so, signals the hopper controller **140** to release an appropriate number of coins into a payout tray (not shown).

[0046] Also in communication with the CPU **110** is a slot network server interface **150**. The slot network server interface **150** provides a communication path from the slot machine **100** to a slot network and, subsequently, to a slot network server. Thus, outcome data can be exchanged between the slot machine **100** and a slot network server. As discussed below with regard to an alternate embodiment, the slot machine **100** includes a player tracking card reader device **160**. The player tracking card reader device **160**, which is in communication with the CPU **110**, includes a display area **162**, a keypad **164**, and a card reader **166**. As discussed below, both the keypad **164** and the card reader **166** are input devices that allow a player to communicate with the slot machine **100** and by extension, the slot network server.

[0047] In alternate embodiments, the slot machine **100** does not include the reel controller **130** and reels **132**, **134**, **136**. Instead, a video display area **138** graphically displays representations of objects contained in the selected game, such as graphical reels or playing cards. These representations are preferably animated to display the playing activity of the selected game. Thus, according to some embodiments of the present invention, information about an outcome (e.g., resulting reel symbols) may be displayed via a video display area **138**, in addition to or in lieu of displaying the information via reels **132**, **134**, and **136**. In another alternative embodiment, as will be more fully described with respect to FIG. 4F, slot machine **100** includes an overlay device **139**, made of translucent materials, which covers reels **132**, **134**, and **136**. Such an overlay device **139** conveniently allows the player to see electronic messages while viewing the physical reels underneath.

[0048] In some other alternative embodiments, the slot machine **100** includes both physical reels and a video

display device that is not laid over the reels **132**, **134**, and **136**. For example, the video display device and the reels **132**, **134**, and **136** may be relatively positioned with respect to a partially reflective mirror, such that an image from the video display device is projected between the viewing player and the reels **132**, **134**, and **136**, and may appear, in some embodiments, to be imposed over the reels.

[0049] It should be noted that this invention does not require a physical slot machine, and could instead be embodied completely in software. Such an embodiment would allow play as stand alone software running on conventional personal computers. Examples of slot machine software include SLOTS II© software by MASQUE PUBLISHING and HTTP://WWW.WAGERWORKS.COM.

[0050] As noted above, the slot machine **100** selectively operates in a reverse payout mode. The reverse payout mode is initiated when a player selects reverse play on a payout selector **144** in communication with the CPU **110**. As will be appreciated by one skilled in the art, possible payout selectors **144** include a button, a toggle switch, a virtual button on a touch screen, a software flag and the like. When reverse payout mode is selected, the slot machine **100** operates generally as described above, with the exception that the CPU **110** locates the appropriate payout in a stored reverse payout table **146** rather than the normal payout table **128**. The payout tables represent sets of data which correlate outcomes with payouts. As described in detail below with reference to FIGS. 2a, 2b, 2c, 3a, 3b, 3c, and 3d, a majority of the outcomes in the normal payout tables **128a-c** correspond to a losing result for the player. In the reverse payout tables **146a-d**, however, the majority of the outcomes correspond to a winning result. In other words, the ratio of winning outcomes to losing outcomes is greater than one in reverse payout tables **146a-d**. Stated another way, the statistical likelihood of generating any winning outcome is greater than the statistical likelihood of generating any losing outcome. Thus, while in the short run a predominance of losing outcomes may occur, the long run expectation is that more winning outcomes will result. In some cases, the amounts won or lost as determined by the reverse payout tables **146a-d** are, at least in part, inversely proportional to the amounts won or lost as determined by the normal payout tables **128a-c**. In other words, for a majority of given outcomes, the greater the win as determined by the normal payout tables **128a-c**, the greater the amount lost as determined by the reverse payout tables **146a-d**.

[0051] The normal payout tables **128** will now be described with reference to FIGS. 2a, 2b, and 2c. FIG. 2a depicts one logical representation of the normal payout table **128a**. In this representation, each of the 10,648 random numbers, as represented in the "Random Number" field **230**, corresponds to a set of reel positions representing an outcome, as shown in the "Reel 1" **232**, "Reel 2" **234**, and "Reel 3" **236** fields. Thus, by way of example, random number "00006" corresponds to an outcome of "7-BAR-CHERRY." Further, each random number (and thus outcome) also corresponds to a pay combination, as indicated in the "Pay Combination" field **238**. Each pay combination may correspond to multiple random numbers and outcomes. For example, the outcome "7-BAR-CHERRY" corresponds to the pay combination "ANY/ANY/CHERRY" as does "BAR-BELL-CHERRY." This payout table illustrates the correlation between the generated random numbers, the

outcomes (the position of each of the reels **132**, **134**, **136**), pay combinations, and the payout information.

[0052] It is to be understood that the table of **FIG. 2a** contains information from both a probability table **126** and the normal payout tables **128b** and **128c**, and, as such, in an alternate embodiment may replace these tables.

[0053] The normal payout table **128b** of some embodiments of the present invention will now be described with reference to **FIG. 2b**. As discussed below, the normal payout table **128b** shown is a typical 94.5% payback payout table. In other words, statistically, the slot machine **100** will pay out 94.5% of the money wagered, and retain for the house 5.5% of the money wagered. In general, the normal payout table **128b** correlates outcomes to payout information, including the number of coins awarded and the player win/loss amount for a given play. It is to be understood, based on the following description, that the number of coins awarded and the player win/loss amount are essentially alternate representations of the same information.

[0054] As shown, the normal payout table **128b** can be logically represented by five fields of related information. The data represents payout information for a one coin wagered per play model. A pay combination field **210** identifies possible pay combinations to which each outcome can be correlated. These pay combinations include, for example, "ANY/ANY/CHERRY" and "BAR/BAR/BAR", for which a positive number of coins are awarded, as indicated in the "Number of coins Awarded" field **212**. The pay combination field **210** also includes an "Other" entry for all other combinations, representing normally non-winning outcomes for which no payment is to be made to a player. These normally non-winning outcomes, such as "PLUMBELL-ORANGE," result in no coins awarded, as indicated in the Number of coins Awarded field **212**.

[0055] Also shown in **FIG. 2b**, the payout table **128b** includes an "Expected Hits" field **214**. The expected hits field **214** indicates the number of outcomes per cycle that correspond to a given pay combination. For example, in one cycle, outcomes corresponding to the "ANY/CHERRY/CHERRY" pay combination **210** will theoretically occur two hundred times, as indicated in the expected hits field **214**. Similarly, outcomes corresponding to the "CHERRY/ANY/CHERRY" pay combination in field **210** will theoretically occur sixty-eight times in every cycle. As shown, even though both of these pay combinations include two "CHERRY" symbols, the expected hits **214** differ. It is to be understood that the difference in the expected hits for "ANY/CHERRY/CHERRY" and "CHERRY/ANY/CHERRY" results from the different number of times cherry appears on each of the three reels **132**, **134**, **136**. Specifically, as depicted in **FIG. 2b**, the second reel **134** has more "CHERRY" stops than the first reel **132**, thereby making the "ANY/CHERRY/CHERRY" pay combination more likely. This, of course, assumes that each reel stop has an equal probability of selection. It is to be understood that the present invention may also accommodate slot machines in which each reel stop has a different probability of selection.

[0056] The normal payout table **128b** also includes a "Player win/loss" field **216**. While the number of coins awarded field **212** equals the total payout, if any, made to a player, the Player win/loss field **216** represents the net change in the player's finds for each pay combination. A

negative number indicates a loss by the player while a positive number indicates a win.

[0057] Further, the normal payout table **128b** includes an "Expected Hits×Player win/loss" field **218**. As implied by the name, this field represents the number of Expected hits **214** multiplied by the amount in the Player win/loss field **216** for each outcome which falls within the given pay combination. Therefore, the Expected hits×Player win/loss field **218** represents, for each pay combination, the statistically expected total amount won or lost by a player in a cycle. For example, because normally non-winning outcomes are expected 8,570 times in each cycle, and because on each play a player will lose one coin (the amount wagered) players will theoretically lose a total of 8,570 coins in every 10,648 plays for this particular pay combination in one cycle of plays on slot machine **100**.

[0058] As indicated by the information in payout tables **128a-128c**, the Expected hits **214** for all pay combinations totals 10,648. As further indicated by payout tables **128a-128c**, the total amount won or lost for all pay combinations is negative 586, representing 586 coins lost by the player(s) and won by the house. Thus, in a one coin wagered model, in 10,648 plays, 10,648 coins are wagered, with the house retaining 586 coins. In other words, the house pays 10,062 coins back to players, or about 94.5% of the 10,648 coins wagered per each cycle, hence the 94.5% payback rate.

[0059] **FIG. 2c** depicts a normal payout table for some alternative embodiments of the present invention. In such embodiments, the player is making the necessary finds available to cover the largest potential loss for one play of slot machine **100**. Because the player is only making the necessary finds available, the amount stored in the Number of coins awarded field **222** is identical to the amount stored in the Player win/loss field **226** for each listed pay combination. Thus, slot machine **100** does not subtract the amount wagered before each play. Instead, the net win or loss is added to or subtracted from the player's credit balance.

[0060] It is to be understood that the normal payout tables **128b** and **128c** depicted in **FIGS. 2b** and **2c** include some information not necessary to the operation of the present invention. Thus, in alternate embodiments, the normal payout tables **128b** and **128c** correlate only the pay combinations **210,220** to either the number of coins awarded **212,222** or the Player win/loss **216,226**. The normal payout tables **128b** and **128c** need not include the Expected hits fields **214,224** or the Expected hits×Player win/loss fields **218,228**. These fields include information that merely describes, not dictates, the operation of the slot machine **100**.

[0061] It is also to be understood that the normal payout tables **128b** and **128c** may correlate the Number of coins awarded **214,224** and the Player win/loss **216,226** amounts to pay combinations for plays where other than one coin is wagered. Thus, the normal payout tables **128b** and **128c** are merely exemplary of possible normal payout tables. In this regard, an alternate embodiment utilizes multiple payout tables, each containing payout information for a different amount wagered. It is to be understood that in multiple coin models, there are outcomes that may provide a payout to the player but result in a loss. For example, when three coins are wagered, a payout combination may call for a payout of two coins, resulting in a loss of one coin for the player. In another embodiment, a single payout table contains the payout information for each of the different amounts wagered.

[0062] It is further to be understood that the normal payout tables **128a-c** need not include a pay combinations field at all. Rather, in an alternate embodiment, the normal payout tables **128a-c** directly correlate outcomes to payout information, such as the Number of coins awarded or the Player win/loss amounts.

[0063] Other normal payout tables that are within the scope of the present invention include those having different payout amounts, different reel symbols, and different pay combinations. In general, however, typical normal payout tables can be characterized in that a player wins on the occurrence of the relatively few outcomes that are the least likely to occur, and the amount of the win increases as the likelihood of the particular outcome occurring decreases.

[0064] The exemplary reverse payout tables **146a-146d** will now be described with reference to **FIGS. 3a, 3b, 3e, and 3d** and continuing reference to **FIGS. 2b and 2c**. The reverse payout tables **146a-d** are identical in structure to the normal payout tables **128b** and **128c**, as described in **FIGS. 2b and 2c**. Inherent in this structure is the number of total possible outcomes and the corresponding pay combinations. They are different, however, in the data described in the Number of coins awarded fields **312,322,332,342** Player win/loss fields **316,326,336,346** and the Expected hits×Player win/loss fields **318,328,338,348**.

[0065] In general, the reverse payout tables **146a-146d** can be characterized as having payouts which occur for the relatively numerous outcomes that are the most likely to occur, while a loss occurs for the relatively few outcomes that are the least likely to occur. Thus, for the majority of outcomes, where the normal payout tables **128b** and **128c** provide for a zero payout or a loss, the reverse payout tables **146a-146d** provide for a positive payout, or a win. Likewise, a positive payout or win in the normal payout tables **128** correspond to a loss in the reverse payout tables **146a-146d**.

[0066] The reverse payout table **146a** is exactly the reverse of the normal payout table **128b** in that each player win/loss result is reversed. Thus, because the normal payout table **128b** favors the casino by about 5.5%, the reverse payout table **146a**, which is exactly the opposite of the normal payout table **128c**, favors the player by about 5.5%. In other words, the reverse payout table **146a** is a 105.5% payback table.

[0067] Like the normal payout tables **128a-c**, the reverse payout tables **146a-d** include a pay combination field **310** containing the same normally winning and normally non-winning pay combinations found in the normal payout tables **128**. As used herein, the term “normally winning” means winning as determined by the normal payout tables **128**. Similarly, “normally non-winning” and “normally losing” means non-winning as determined by the normal payout tables **128b** and **128c** (i.e. pay combination “Other”).

[0068] As with the normal payout tables **128a-128c**, the Player win/loss fields **316,326,336,346** and the “Expected Hits×Player win/loss” fields **318,328,338,348** contain the theoretical amounts won or lost per play and per cycle, respectively. However, for normally winning pay combinations, the reverse payout tables **146a-146d** indicate a loss to the player, and for normally losing pay combinations, the reverse payout tables **146a-146d** indicate a win for the player. In other words, the player win/loss amounts **316,**

326,336,346 of the reverse payout tables **146a-146d** may be arrived at by multiplying each Player win/loss amount **216** of the normal payout table **128b** by negative one (“-1”). Because the expected hits **314,324,334,344** are identical to those of the normal payout tables **128b** and **128c**, the “Expected Hits×Player win/loss” amounts **318** are the reverse of those in the normal payout tables **128b** and **128c**. Thus, while the normal payout table **128b** results in the player losing 586 of the 10,648 coins wagered, the reverse payout table **146a** results in the player winning 586 coins. Thus, the slot machine **100** described in **FIG. 3a** becomes a 105.5% payback machine.

[0069] Because in the reverse payout table **146a** depicted in **FIG. 3a** the Player win/loss amounts **316** include losses greater than one coin, the player must place additional funds at risk. As shown in **FIG. 3a**, for example, the player faces a loss of ninety-nine coins if an outcome of “7-7-7” is produced. As discussed below, the funds necessary to cover such losses may be stored credit that the player previously accumulated, a credit balance stored in memory, additional cash fed into the machine via a bill validator or the coin acceptor, funds stored on a stored value card or “smart card”, in a player “comp” account, in a cashless gaming account, or in a credit/debit card account.

[0070] **FIG. 3b** depicts an alternate embodiment of the payout table **146a** described in **FIG. 3a**. In reverse payout **146b** the slot machine **100** reduces the player’s credit balance by ninety-nine coins prior to generating the outcome. Specifically, the player places ninety-nine coins at risk. An outcome of “Orange-Orange-Orange”, for example, results in a payout of eighty coins, netting a to a loss of nineteen coins for the player.

[0071] Because the player faces large potential losses with reverse payout tables **146a** and **146b**, slot machine **100** could incorporate an insurance protocol in which the player deposits one coin and presses insurance selector **145** before each spin. In the event of a jackpot, the insurance policy covers the amount of the loss. Multiple insurance policies are possible, with the cost of the insurance rising with the amount of coverage increasing. The amount of coverage may be calculated with reference to the Expected hits×Player win/loss **318,328** in order to capture both the frequency and magnitude of the covered payouts.

[0072] In practice, a reverse payout table that favors players, such as reverse payout tables **146a** or **146b** in **FIGS. 3a** and **3b**, is probably unacceptable to the casino operator except as a restricted promotional device. To ensure that the casino continues to make money, adjustments may be made to the reverse payout tables so that they favor the casino. In the embodiment depicted in **FIGS. 3c** and **3d**, the reverse payout tables **146c** and **146d** are adjusted so that they provide for payouts which are less than the total amount of coins wagered for one cycle. The reverse payout table **146c** shown in **FIG. 3c** includes the same fields as the reverse payout tables **146a** and **146b** of the prior embodiments, and the same individual pay combinations. Furthermore, in the embodiment of **FIG. 3c**, reverse payout mode requires a player to wager (and therefore potentially lose) at least five coins while paying out only six coins for a normally non-winning outcome/pay combination. It should be noted that the amount of coins wagered per play could be any number of coins as specified by the casino operator. Although

reverse payout table **146c** is described using whole coins, the present invention may be practiced using fractional coin values. Thus, for a wager of one coin, a payout may total only one sixth of a coin. These fractional amounts may be accumulated in RAM **118** and paid out when a whole coin is reached.

[0073] Alternatively, in other embodiments, the number of consecutive normally non-winning outcomes may only pay out for up to a predefined number of times, for example, in a given time period, a defined number of successive wins, and/or a defined number of coins output. There are many other possible ways to control the total amount paid out to a player in order to maintain a reasonable house advantage.

[0074] Focusing on the “Other,” or normally losing pay combination, it is apparent that such a pay combination will theoretically hit 8,570 times in one cycle, each time causing the player to win one coin, as depicted in the Player win/loss field **336**, and awarding six coins, as depicted in the number of coins awarded field **332**. Six coins are awarded because the player receives the five coins that were wagered plus the one coin won.

[0075] Also shown in the Player win/loss field **336**, the amount lost for each of the normally winning pay combinations is five coins. Because the player can only lose what is wagered and no more, namely five coins, there is no need to place additional funds at risk. Furthermore, given the five coin loss for each normally winning pay combination and the one coin win for each normally losing pay combination, the reverse payout table **146c** theoretically results in the house winning 1,820 coins of the 53,240 coins wagered per cycle ($\{10,648 \text{ plays}\} \times \{5 \text{ coins/play}\} = 53,240 \text{ coins}$). In other words, the reverse payout table **146c** is approximately a 96.5% payback table.

[0076] The reverse payout table **146d** shown in FIG. 3d includes the same fields as the reverse payout tables **146a-146c** of the prior embodiments, and the same individual pay combinations. The reverse payout table **146d** of FIG. 3d, however, represents an embodiment where the player makes the five coins available (i.e. slot machine **100** does not reduce the player’s credit balance by the amount of the wager before each play).

[0077] During normal payout mode, the slot machine **100** provides a normal payout display **400**, as shown in FIG. 4a, on the video display area **138**. The normal payout display **400** includes a pay combination field **410** which displays normally winning pay combinations. The normal payout display **400** also displays payout information for each pay combination. Specifically, as depicted in FIG. 4a, the payout display **400** includes three fields of payout information, each directed to a different number of coins wagered. The “1ST COIN” field **420** includes the number of coins awarded when one coin is wagered, as indicated in field **212** of the normal payout table **128b**. Similarly, the “2ND COIN” field **430** includes the number of coins awarded when two coins are wagered, and the “3RD COIN” field **440** includes the number of coins awarded when three coins are wagered.

[0078] FIG. 4b is a plan view of slot machine **100** in normal payout mode. Slot machine **100** is configured for normal play as is illustrated by the normal payout display **400** displayed in video display area **138**.

[0079] During reverse payout mode, the slot machine **100** provides a reverse payout display **401**, as shown in FIG. 4c,

on the video display area **138**. The reverse payout display **401** includes a pay combination field **411** which displays normally winning pay combinations and the “Other” pay combination. The reverse payout display **401** also displays payout information for each pay combination. Specifically, as depicted in FIG. 4c, the payout display **401** includes three fields of payout information, each directed to a different number of coins wagered. The “5 COINS” field **421** includes the number of coins awarded when five coins are wagered, as indicated in field **332** of the reverse payout table **146c**. Similarly, the “10 COINS” field **431** includes the number of coins awarded when ten coins are wagered, and the “15 COINS” field **441** includes the number of coins awarded when fifteen coins are wagered.

[0080] FIG. 4d is a plan view of slot machine **100** in reverse payout mode. Slot machine **100** is configured for reverse play as is illustrated by the reverse payout display **401** displayed in video display area **138**.

[0081] As discussed herein, a player operating slot machine **100** without knowing that he was playing in reverse mode could be upset when he achieves an ordinarily winning outcome that results in a loss in reverse mode. Accordingly, some embodiments of the present invention provide for the slot machine **100** to include one or more informational and/or warning features for indicating to a player that the gaming machine is operating in a reverse payout mode. Of course, the slot machine **100** could also employ any of the various techniques discussed herein for indicating when the slot machine **100** is operating in a normal payout mode. FIGS. 4e, 4f, and 4g depict some exemplary techniques for indicating in what payout mode a gaming device is currently operating.

[0082] FIG. 4e is a plan view of slot machine **100**, and depicts an exemplary embodiment in which the normal payout display **400**, representing at least a portion of a normal payout table, and the reverse payout display **401**, representing at least a portion of a reverse payout table, are displayed simultaneously. In order to minimize confusion as to which of the displayed payout tables is applicable for a given handle pull, the active payout table may be backlit, while the inactive payout table may be dark. In this way the current mode of the machine may be readily apparent to the player.

[0083] In an embodiment in which the payout tables are electronically displayed (e.g., in one or more video display areas **138**), the inactive payout table could be grayed out, while the active payout table is displayed at maximum brightness. FIG. 4e illustrates an embodiment in which normal payout display **400** is darkened and reverse payout display **401** is fully lit, indicating to the player that the reverse payout table is in effect for the current handle pull.

[0084] Other exemplary ways of indicating that a displayed payout table is inactive include, without limitation, changing background colors, using a smaller font, making the font fuzzy, shrinking the size of table, putting the international symbol for “No” (e.g., a circle with a diagonal slash) over the entire payout table (or above the table, etc.), and the like. Exemplary techniques for highlighting a payout table to indicate that the payout table is in use include, without limitation, flashing the text, making the font larger, electronically moving it, scrolling the pay information (e.g.,

as on a marquee), or flashing text across the payout table, including messages to the player indicating that the table is currently in use.

[0085] While the two payout tables are illustrated in FIG. 4e as separate tables, in an alternative embodiment they could be combined into a single payout table, for example, indicating both the normal and reverse payouts for a particular outcome (or set of outcomes). In one example, payouts that are not currently eligible could be temporarily blacked out, or indicated as being inactive in accordance with one or more of the techniques discussed herein. Similarly, the active payouts in a combined payout table could be highlighted according to various techniques discussed herein.

[0086] FIGS. 4f and 4g depict some other exemplary indications that a gaming device is operating in a reverse payout mode. In FIG. 4f, an overlay device 139 is shown positioned between a player and the physical reels 132, 134, and 136 such that the player is able to view the three physical reels 132, 134, and 136 through at least a portion of the overlay device 139. The overlay device 139 preferably is a translucent or transmissive electronic display device, operative to display fixed and/or scrolling electronic messages across its surface. The overlay device 139 may comprise any of various different commercially available technologies. For example, a display device such as the NOMAD® PERSONAL DISPLAY SYSTEM® by MICROVISION INC.® could be adapted to allow an image to be projected onto the surface of an overlay device 139 using a high-luminosity LCD projector. Alternatively, Liquid Crystal Displays (LCDs) may be used to create images on an overlay device 139 by selectively blocking light passing through a polarizing filter. Such technology can be used to create text and/or animated graphic images. In some embodiments, the overlay device 139 may comprise a touch screen operable to register player input, such as the use by the player of one or more virtual buttons on the touch screen.

[0087] Preferably, the overlay device 139 is transparent enough (or may be responsive to signals from the slot machine 100 to become transparent enough, such as by the selective use of a polarizing filter) so that the player may view the physical reels 132, 134, and 136 during play. In addition, as depicted in FIG. 4f, various messages, images, and/or text may be displayed on the overlay device 139 to help the player understand whether he is playing in normal mode or in reverse mode. Using the overlay device 139, for example, a message can be positioned in the player's line of sight of the physical reels, making it difficult for the player to miss the message. As discussed herein, displayed images and/or text may be moving, flashing, animated, or otherwise highlighted in some way in order to capture the player's attention. In the exemplary embodiment depicted in FIG. 4f, the message "Warning—Machine Payouts In Reverse Mode" appears near the top of overlay device 139. Such warnings might move up and down during play, or could flash intermittently to attract the attention of the player. Additional warning text appears displayed over each of the reels 132, 134, and 136 in the form of the word "Reverse." Other types of messages, symbols, and warnings for indicating to a player in which mode the slot machine 100 is operating in are discussed herein and with respect to FIG. 4g. Note that the overlay device 139 may also be used to

indicate when the slot machine 100 is operating in a normal payout mode (e.g., by displaying the word "Normal" over the reels 132, 134, and 136).

[0088] In some alternative embodiments of the invention, the slot machine 100 has physical reels 132, 134, and 136 in addition to a video display area 138, which may duplicate the result of the reel spins electronically. Any of the various warning messages described herein could be displayed on video display area 138 in addition to or in lieu of use of the overlay device 139. In still other embodiments, audio warnings and messages could be communicated to the player, for example, using an audio speaker.

[0089] FIG. 4g illustrates various embodiments of the present invention, in which an indication of the mode of the machine may be presented as being on the reels themselves. Reel set 4001 represents a set of reels for use when operating under reverse payout table 401. The symbols in the reel set 4001 appear as a photographic negative of the normal reels. In this "negative mode", the symbols themselves are predominantly black and the background has been darkened. In reel set 4002, the text message "Reverse Mode" is electronically displayed on each symbol. As discussed herein, the text could be highlighted in some way. The text could move with the reel symbol (e.g., as if part of the reel symbol) or stay stationary (e.g., as if the reels spin under the message). Another embodiment, as represented in reel set 4003, illustrates the use of the international symbol of a circle with a diagonal line through it, representing "No" or "Not". Such a symbol could be displayed as superimposed over each reel or each reel symbol, to indicate the player is playing in reverse mode.

[0090] While these designations are described above using electronic reels (e.g., displayed in video display area 138), they could of course also be applied to physical reels in an embodiment in which slot machine 100 is permanently in reverse payout mode. In another embodiment, each reel could have two sets of reel symbols imprinted on it—one for normal mode and one for reverse mode. While in normal mode, for example, only the symbols of normal mode would appear. In yet other embodiments, the slot machine 100 may have two sets of physical reels, each corresponding to a particular mode of play.

[0091] According to some embodiments of the present invention in which the slot machine 100 comprises physical reels, electronic video images could be added to physical reels, for example, by wrapping thin flexible electronic displays around the physical slot machine reels. Accordingly, the physical reels would spin, but the images on those reels could be manipulated as on an electronic video reel display. This would allow more flexibility in configuring slot machines with physical reels to display warnings relating to reverse mode payouts. Such embodiments may be particularly suitable for retrofitting slot machines with physical reels using minimal time and expense.

[0092] The operation of some embodiments of the present invention will now be described with reference to FIGS. 5a and 5b, and with continuing reference to FIGS. 1-3d. In a typical scenario, a player plays a slot machine 100, shown as step 502, using the normal payout table 128b.

[0093] While playing the slot machine 100 in normal payout mode, the player may accumulate credits on the slot

machine 100 by hitting one or more jackpots. Having hit a jackpot and accumulated credits, shown in step 504, a player may decide that his or her “luck has run out” or the machine has “gone cold.” Rather than terminating play, the player may elect to switch to a reverse payout mode in an attempt to exploit his or the machine’s perceived bad luck. Thus, in step 506, the player selects reverse payout mode on the payout selector 144 of the slot machine 100. The CPU 110 receives a signal from the payout selector 144 in step 508 and accesses the reverse payout table 146c. Payout selector 144 could also select from among a set of possible reverse payout tables 146a-d, allowing the player a choice of different payout structures. Payout selector 144 may also be triggered automatically by slot machine 100. For example, after winning two jackpots with normal payout table 128b, the game may automatically switch to reverse payout table 146c, or at least indicate to the player that the option is available. Having accessed the reverse payout table 146c, the CPU 110 causes a reverse payout display 401 to be displayed on the video display area 138 in step 510. Alternatively, the information of reverse payout table 146c could be displayed on the belly glass of the slot machine along with the normal payout information as is customary for slot machines.

[0094] As further described in FIG. 5b, the player then proceeds to initiate play of the slot machine 100 in the reverse payout mode. Specifically, in step 512, if the player has accumulated credits on the slot machine 100, then the player selects the number of coins to wager. Before continuing, the CPU 110 determines whether the player has enough accumulated credits stored to cover all potential losses, as indicated in the Player win/loss field 336 of reverse payout table 146c. For example, if the maximum possible loss is ninety-nine coins, then the player must deposit or make available funds equivalent to the value of the ninety-nine coins. In one embodiment, the player merely deposits enough coins in the coin acceptor 148. CPU 110 registers how many coins have been wagered. In step 514, the player presses the starting controller 122 or pulls a handle (not shown) to initiate the random number generator 120 and the spinning of reels 132, 134, 136.

[0095] As shown in step 516, the results from random number generator 120 and the probability table 126 may initiate CPU 110 to display a normally winning outcome, such as “CHERRY-CHERRY-CHERRY” on the reels 132, 134, 136. If such a normally winning outcome occurs, then, in step 518, the slot machine 100 decrements the player’s stored credits based on the reverse payout table 146c. Decrementing the player’s stored credits involves the CPU 110 accessing the reverse payout table 146c. CPU 110 proceeds to correlate the outcome, “CHERRY-CHERRY-CHERRY”, to the “CHERRY/CHERRY/CHERRY” pay combination in the pay combination field 330, and to the corresponding loss of five coins in the Player win/loss field 336. Thus, in step 518, the CPU 110 adjusts the stored credits accordingly.

[0096] Another possibility, based upon the random number generator 120 and the probability table 126, is that a normally losing outcome, such as “PLUM-BELL-ORANGE” may appear on the reels 132, 134, 136. The occurrence of a normally non-winning outcome is shown as step 520. If such a normally non-winning outcome occurs then in step 522, the slot machine 100 increments the player’s

credits based on the payout information in the reverse payout table 146c. Specifically, the CPU 110 accesses the reverse payout table 146c to identify the Player win/loss amount 336 corresponding to the particular outcome and pay combination. The CPU 110 proceeds to adjust the stored credits accordingly, in this example adding six coins to the player’s credit balance.

[0097] Regardless of whether a normally winning or normally losing outcome occurs, in step 524 the player decides whether or not to continue playing in the reverse payout mode. If the player decides to continue playing in a reverse payout mode, then the operation continues from step 512. On the other hand, a player may decide not to continue playing in the reverse payout mode. For example, a player may perceive his or her luck is improving or that the slot machine 100 is “due to hit” or “getting hot.” Thus, in step 526, rather than leaving the machine, the player uses the payout selector 144 to select normal payout mode.

[0098] In an alternate embodiment, the slot machine 100 includes only the reverse payout table 146c and not the normal payout table 128b. With such a slot machine 100, the normally winning outcomes, although not identified in any normal payout table, are typically pre-determined and identified to the player in the form of a display. As in the previously described embodiment, the embodiment having only a reverse payout table will prevent a player from stopping play or leaving the casino based on perceived bad luck. In such an embodiment, the slot machine operates as described above with reference to steps 512-524 of FIG. 5b.

[0099] An alternate embodiment will now be described with reference to FIGS. 6-11, and with continuing reference to FIGS. 1-3d. In general, the embodiment to be described allows a player to wager on the play of a slot machine in reverse payout mode without relying solely on credits stored at or coins deposited into the slot machine 100. Instead, the player uses a player tracking card that identifies a credit balance stored by a slot network server. The information stored by the server may include a credit balance, a credit card number, a complimentary points awarded total, a total associated with the charge balance of a hotel room, and the like. This information is used as a source of funds or points for a player to wager.

[0100] More specifically, such an embodiment includes multiple slot machines 100 in communication with a slot network server 600 via a conventional local area network (slot network) 602. The slot network 602 is controlled by the slot network server 600. It is to be understood that communication between each slot machine 100 and the slot network server 600 may also occur across a wireless network or Internet connection. A cashier terminal 612 is also coupled to the slot network server 600.

[0101] As will be discussed in greater detail below, each slot machine 100 communicates outcome data to the slot network server 600. As used herein, outcome data includes all game activity-related information, which is being passed from a slot machine 100 to the slot network server 600. In one or more embodiments of the present invention, such outcome data includes the Number of coins wagered, the Player win/loss amount, and the position of the reels 132, 134, 136 on the slot machine 100. Thus, outcome data includes any given outcome and the payout information for that outcome. As discussed below, in an alternate embodi-

ment, such outcome data also includes an indication of which payout mode, either normal or reverse, the slot machine 100 is operating in. It will be understood that the position of the reels 132, 134, 136 and the payout information are essentially alternate representations of the same data.

[0102] Because each slot machine 100 has a unique machine identification (ID) number, the slot network server 600 is able to distinguish the outcome data as being sent from a particular slot machine 100 and to store the outcome data with reference to that particular machine 100.

[0103] To facilitate the communication between a player, the slot machine 100 and the slot network server 602, a casino typically issues a player tracking card containing player identifying information. Such identifying information can be any information that uniquely identifies a player to the system and, in various embodiments of the present invention, includes the player identification (ID) number. The identifying information is preferably stored on a magnetic strip on the player tracking card.

[0104] The player tracking card reader 166 reads the player identifying information from the player tracking card and communicates the information to the CPU 110, which in turn communicates the identifying information to the slot network server 600. Because the player identifying information uniquely identifies a given player, the slot network server 600 is able to access information associated with that player, such as a credit balance.

[0105] With reference to FIG. 7, the slot network server 600 will now be described in greater detail. Like the slot machine 100 of FIG. 1, the slot network server 600 has a Central Processing Unit (CPU) 710. The CPU 710, which has a clock 712 and operating system 714 associated therewith, executes instructions of a program stored in either Read Only Memory (ROM) 720 or Data Storage Device 740. During execution of the program instructions, the CPU 710 temporarily stores information in the Random Access Memory (RAM) 730.

[0106] In order to communicate with the cashier terminal 606, the slot network server 600 also includes a communication port 750. The communication port 750 is coupled to the CPU 710, as well as to the slot machine network 602 and the cashier terminal 606. Thus, the CPU 710 can control the communication port 750 to receive and transmit information from each slot machine 100, and the cashier terminal 606.

[0107] Additionally, the CPU 710 is coupled to a data storage device 740, having a transaction processor 742, a casino player database 744, a session database 746, a terminal database 748, and a slot machine database 749. In general, the transaction processor 742 manages the contents of the data storage device 740, and may comprise a dedicated processor, or a portion of the function of processor 710.

[0108] In general, the exemplary casino player database 744, as shown in FIG. 8, includes multiple records having multiple fields of information related to player identification. Specifically, the player database 744 comprises multiple records, each record being associated with a particular player, as identified by a player identification (ID) number. The fields within each record include: name 7440, player ID number 7442, player address 7443, credit card number 7445,

credit balance 7446, complimentary information 7447 (such as complimentary points accumulated), and player status rating 7449. Having information related to one field, such as player ID number 7442, allows the slot network server 600 to index all information stored in the other fields of that player's record.

[0109] It is to be understood that for purposes of some embodiments of the present invention, only the player ID number field 7442, and the credit balance field 7446 are necessary. The remaining fields are merely representative of additional information that may be stored and used for other purposes. For example, credit card number 7445 is used for billing purposes and address 7443 is used to mail casino promotions to players to provide incentives to them to return to the casino.

[0110] The slot machine database 749 relates to information concerning particular slot machines 100. As illustrated in FIG. 9, each slot machine 100 has an associated record in the database identified by a machine ID number, as stored in the machine ID number field 7491. The other fields in the slot machine database 749 include: player ID number 7492, payout 7494, amount wagered 7497, payout mode 7498, and payout table identifier 7499.

[0111] Having thus described the components of the slot machine 100 according to some embodiments of the present invention, the operation of the system 604 will now be described in greater detail with reference to FIG. 10, and continuing reference to FIGS. 1, 2a-c, 3a-d, 5a, 5b and 6-9. It is to be understood that the programs stored in ROM 720 of the slot network server 600 and ROM 116 of the slot machine 100 provide the function described below.

[0112] The process of adding funds to the player's credit balance 7446 will now be described with reference to FIG. 10. Initially, in step 1010, the player goes to a casino cage or slot booth and presents the player tracking card to a casino employee. The casino employee proceeds, in step 1020, to read the player identifying information, namely the player ID. The casino employee then enters the player ID and the amount of funds being deposited by the player into the cashier terminal 606. Alternatively, the player provides a credit card number to which any losses can be charged by the casino.

[0113] In step 1030 the cashier terminal 606 transmits the player ID and the amount of funds deposited to the slot network server 600. Once the server 600 receives the player ID and the amount of funds deposited, the server CPU 710 causes the transaction processor 742 to access the casino player database 744. More specifically, the transaction processor 742 searches the casino player database 744 for the record containing the received player ID in the player ID field 7442. Having thus located the appropriate record, in step 1040, the transaction processor 742 increments the credit balance field 7446 by the amount of funds deposited. Once the player database 744 has been updated, the player takes the player tracking card back from the casino employee in step 1050 and proceeds to the slot machine 100.

[0114] The player does not have to use cashier terminal 606 to add money to credit balance 7446. Instead the player may provide money or account data directly into slot machine 100, which in turn transmits the credit data to slot server 600. In such embodiments, the slot machine 100

could be equipped with either a smart card or credit card reader. The player is making these funds available such that any losses sustained while playing the reverse mode on the slot machine 100 will be covered by those funds prior to the actual loss. Initiation of play will now be described with reference to FIG. 11 and continuing reference to FIGS. 1, 7, 8 and 9.

[0115] Having thus established a credit balance 7446, the player may initiate play of a slot machine 100. The CPU 110 transmits a signal to the slot network server 100 indicating funds have been received.

[0116] As shown as step 1110, the slot machine player first inserts the player tracking card into the card reader 166. The card reader 166 then proceeds to read the player identifying information from the tracking card. The player identifying information, namely the player ID, is communicated from the slot machine 100 to the slot server 600. Upon receiving the player identifying information, the slot server 600 authenticates the information. This step, depicted as step 1112, includes the slot network server 600 searching the casino player database 744 for a record containing the received player ID in field 7442. The server 600 also stores the player ID number in the field 7492 of the record in the slot machine database 749. Once the slot network server 600 authenticates the player identifying information, the server 600 may transmit a signal to the slot machine 100 acknowledging such authentication.

[0117] In step 1114, displayed on either display 162 or video display area 138, the player selects either normal payout mode or reverse payout mode on the payout selector 144. This selection may be prompted by a message from slot machine 100. The slot machine 100 also prompts the player to enter the amount to be wagered on the upcoming play. Specifically, as shown in step 1116, the player enters the number of coins to be wagered into the keypad 164, or, in an alternate embodiment, a touch screen of the video display area 138 or use of buttons. The slot machine 100 registers the amount to be wagered by the player and stores the value in the RAM 118.

[0118] Having selected the payout mode and entered the amount to be wagered, the player presses the starting controller 122 or pulls the handle to begin play in step 1118. As discussed above, the slot machine 100 generates an outcome based upon a number randomly generated by random number generator 120, the random number corresponding to a reel combination in probability table 126. Once the slot machine 100 generates an outcome, which is shown as step 1120, it determines the appropriate player win/loss amount. Specifically, in step 1122, the CPU 110 accesses either the normal payout table 128c or an appropriate reverse payout table such as 146a or 146d, and correlates the outcome to the player win/loss amount as stored in fields 226, 326, 346 respectively, depending on the mode of play and the appropriate reverse payout table. It should be noted that instead of accessing the Player win/loss field, slot machine 100 could access the Number of coins awarded field in the appropriate payout table to determine the payout to the player.

[0119] The slot machine 100 transmits the number of coins awarded information and player ID number to the slot network server 600 in step 1124. Having received the Player win/loss amount and the player ID number, the slot network server 600 proceeds to update the player's stored credit balance.

[0120] Updating the player's credit balance, shown as step 1126, involves the CPU 710 directing the transaction processor 742 to access the casino player database 744 in order to locate the record containing the received player ID number in field 7442. The transaction processor 742 then adjusts the value stored in credit balance field 7446 by the received Player win/loss amount.

[0121] Once the slot network server 600 has adjusted the player's credit balance accordingly, operation of the system 604 may repeat from step 1114 until either the server 600 determines the player has insufficient funds stored in the credit balance 7446 to play or the player decides to stop playing and removes the tracking card from the card reader 166.

[0122] If the player stops playing and desires to cash out, the player merely goes to the casino cage or slot booth and presents his tracking card. As with the depositing of funds, described above, the server 600 accesses the player's record and adjusts the credit balance field 7446. Rather than incrementing the credit balance 7446, however, the slot network server 600 decrements the stored value by the amount dispersed by the casino employee to the player.

[0123] An alternate embodiment employing the system 604 will now be described with reference to FIG. 12 and continuing reference to FIGS. 1, 2a-c, 3a-d, and 7-9. In this embodiment, the slot machine 100 does not contain payout tables. Instead, the payout tables are stored in the slot network server 600. As noted above, the slot machine database 749 contains a payout mode 7498 which identifies what mode of play, normal or reverse, slot machine 100 is operating in. Furthermore, because the payout tables are stored at the slot network server 600, the same payout tables may be used by multiple slot machines 100. In such an arrangement, the slot machine database 749 would contain a payout table identifier 7499 to a location in memory, such as the data storage device 740 or the RAM 730, where the appropriate payout table is stored. Thus, the slot machine database 749 at least indirectly contains payout information.

[0124] Initially, in step 1200, the slot machine 100 transmits an indication of the payout mode selected by the player to the slot network server 600. The slot network server 600 stores this indication in the payout mode field 7498 of that particular slot machine's record in the slot machine database 749. As with the previously described embodiments, the slot machine 100 then generates a random number and a corresponding outcome, for example, reel positions, in step 1210. In step 1212, the slot machine 100, having generated an outcome, transmits the outcome to the slot server 600. Along with the outcome, the slot machine 100 transmits the amount wagered and the machine ID number so that the slot server 600 can identify from which machine the outcome originated.

[0125] Once the slot network server 600 receives the outcome and amount wagered, it updates the slot machine database 749 in step 1214. More specifically, the slot network server 600 accesses the slot machine database 749 and updates the record pertaining to the particular slot machine 100, as identified by its machine ID number 7491, with the amount wagered 7497.

[0126] After updating the slot machine database 749, the slot server 600, proceeds to update the credit balance field

7446 in the player's record having the same player ID number in field **7442** as found in the player ID number field **7492** of the slot machine database **749**. The credit balance field **7446** is adjusted by the player win/loss amount from the appropriate payout table.

[**0127**] Specifically, the server **600** determines the payout by retrieving the address stored in either the payout mode field **7498** or the payout table indicator field **7499**. The CPU **710** then accesses the payout table stored at the retrieved address in RAM **730** or Data Storage Device **740** and, based upon the stored outcome **7493** and amount wagered **7497**, retrieves the corresponding payout. Accessing the payout table is shown as step **1216**. The CPU **710** then in step **1218** causes the transaction processor **742** to adjust the credit balance field **7446** by the amount of Player win/loss **7494**.

[**0128**] Once the server **600** determines the player win/loss and adjusts the player's credit balance **7446**, the server **600** transmits the player win/loss amount and the new credit balance **7446** to the slot machine **100** for display to the player in step **1220**.

[**0129**] It is to be understood that reverse payout tables other than those shown in **FIGS. 3a-3d** are within the scope of the present invention. Such other reverse payout tables include payout schedules which are more or less favorable to the player, or schedules which result in a greater frequency of positive payouts in exchange for larger losses for the remaining losing outcomes and are based on different amounts of coins wagered.

[**0130**] Alternatively, the present invention can also substitute the use of algorithms for reverse payout tables **146a-d**. One such algorithm is applied to the Player win/loss fields **216,226,236** of normal payout tables **128a-c**, and may be stored in data storage device **124** or ROM **116** of slot machine **100**. The algorithm takes the normal Player win/loss **216,226,236** as an input and returns the corresponding reverse Player win/loss **316,326,336,346**. The algorithm looks like the following:

[**0131**] 1. If the normal player win/loss is a win of greater than five coins, then the reverse player win/loss is a loss of five coins.

[**0132**] 2. If the normal player win/loss is a win of between zero and five coins, then the reverse player win/loss is a loss of two coins.

[**0133**] 3. If the normal player win/loss is zero or a loss of some number of coins, then the reverse player win/loss is a win of one coin.

[**0134**] Another algorithm takes the Number of coins awarded **212,222,232** of one of the normal payout tables **128a-c** as an input and returns the Player win/loss **316,326,336,346** of one of the reverse payout tables **146a-d**.

[**0135**] 1. If the normal Number of coins awarded is greater than zero, then the reverse Player win/loss is a loss of one fewer coins.

[**0136**] 2. If the normal Number of coins awarded is equal to zero, then the reverse Player win/loss is a win of one coin.

[**0137**] The above described payout results may also be produced by altering the probability of each pay combination as depicted in any of the normal payout tables **128a-c**. In this manner, pay combinations with high or medium

payouts have their probability of hitting lowered, while pay combinations of low end payouts have their probability increased.

[**0138**] Another way to shift the odds in favor of the house is to alter the probabilities of the outcomes. Specifically, the probability table **126** is adjusted so that normally winning outcomes, which result in a loss to the player, are more likely while normally non-winning outcomes, which result in a payout to the player, are less likely while in reverse payout mode.

[**0139**] It is to be understood that the normal payout tables **128a-c** and the reverse payout tables **146a-d** may include some of the same Player win/loss amounts. For example, in an alternate embodiment using the reverse payout tables of **FIGS. 13a** and **13b**, the payout for the least likely outcome (and the highest jackpot)—“7-7-7”—is positive in both the normal payout tables **128a-c** and reverse payout tables **1300a-b**. By retaining the highest positive win in the reverse payout tables **1300a-b**, players will be further encouraged to play the slot machine **100** in reverse payout mode knowing that winning the highest jackpot is still possible. Further in this regard, it is within the scope of the present invention to make other jackpots available in the reverse payout table **1300** and to make one or more jackpots available in any of the reverse payout tables described herein.

[**0140**] It is also to be understood that embodiments in which players make nonmonetary wagers are also within the scope of the present invention. Thus, in one embodiment, a player wagers complimentary points, as stored in the “COMP.INFO” field **7447** of the casino player database **744**. Such an embodiment operates similar to the system **604** described above with the exception that the payouts relate to complimentary points, not coins, and the “COMP.INFO” field **7447**, not the credit balance field **7446**, is adjusted based upon the payouts. Upon a player cashing out, the casino could convert the accumulated complimentary points into any kind of award, including free hotel rooms, dinners, tickets to shows, free plays on a gaming device, money, and the like.

[**0141**] In one or more embodiments in which the gaming device is a video poker machine, card values typically represent the outcome display instead of reel symbols. In a typical video poker game, the player receives five cards and then has the option to draw five new cards. The resulting completed hand is paid according to a payout schedule that typically rewards rare hands such as a royal or straight flush with a large coin award. Hands like a full house or flush receive medium payouts while a small pair or no pair hand generally earns the player no payout at all. In a reverse payout table, players are rewarded for low value hands. Much like lowball poker, the player is rewarded for having the worst hands.

[**0142**] **FIGS. 14-18** illustrate various embodiments of the present invention related to play of video poker games in a reverse payout mode. **FIG. 14** illustrates an exemplary normal payout table **400** for use with a video poker game. As depicted in **FIG. 14**, the normal payout table **400** is for use with a full-pay Jacks or Better 6/9 video poker game. The payouts represent the amount of money returned to the player for each coin wagered. For example, a player wagering a single dollar coin who achieves a full house would be paid \$9.

[0143] FIG. 15a illustrates a reverse payout table 401 in which the player is paid only for otherwise losing poker hands. In this example, any hand that is a pair of tens or lower (i.e. a small pair or high card only) pays \$6, while all other possible final hands (e.g. flush, straight, four of a kind) pay nothing to the player. Because tens or lower is a common result in Jacks or Better video poker, and because the player can intentionally throw away good cards in an attempt to achieve a bad hand, the player may be forced to put up five coins in order to play video poker with this exemplary reverse payout table.

[0144] In order to determine what an appropriate payout level is for tens or lower, a Monte Carlo simulation could be run to determine the approximate odds of achieving tens or lower. The amount of money risked by the player may then be adjusted relative to the payout amount, until the final configuration of the reverse payout table 401 results in a reasonable hold percentage for the casino. Alternatively, optimal play could be calculated for all possible initial hand combinations, leading to an exact calculation of the probability of attaining tens or lower with perfect play. Such an exact probability could then be used as described in the Monte Carlo simulation. Note that results of such a simulation would reflect perfect play, and that actual play by casino customers could result in even higher hold percentages for the game.

[0145] FIG. 15b illustrates an alternative reverse payout table 401 in which there are a number of distinct possible low hands that would pay different amounts to the player. For example, a hand of "7 High" pays \$20 while a "5-4-3-2-A" pays \$100 (note that in this particular embodiment, straights and flushes are ignored for the purposes of determining a low hand). Any hand higher than a "9 high" would pay nothing. Preferably, a player would be able to switch between this reverse payout table 401 and a normal payout table 400 during the course of a gaming session.

[0146] One example of play of a video poker game in accordance with one or more embodiments of the present invention is illustrated in FIGS. 16-18. FIG. 16 depicts an exemplary initial hand 1600 of video poker dealt to a player. The initial hand 1600 comprises the ace of clubs, four of clubs, five of clubs, eight of clubs, and ten of spades. Based on this hand, the player might contemplate holding the four of clubs and drawing one card to the flush, but may hesitate to do so if he has been having poor luck, for example.

[0147] FIG. 17 depicts an exemplary display 1700 at the slot machine 100, in which the slot machine 100 prompts the player whether he wants to play the hand in a reverse payout mode by displaying the message: "Want to bet against high?" (e.g., in the video display area 138, at the overlay device 139). The player may accept or reject the displayed offer in a manner known in the art (e.g., by actuating an appropriate button of the slot machine 100). To prevent the player from holding only cards that would help him achieve a low value hand, during play in reverse payout mode the slot machine 100 preferably determines which cards of the initial hand will be held. The slot machine 100 thus selects one or more cards to hold, for example, based on a determination of the draw strategy with the highest expected value, as discussed herein. In some embodiments, the slot machine 100 may also indicate to the player which cards, if

any, will be held. In this example, the four cards to the flush are to be held (as indicated in FIG. 17 by the dashed border surrounding the four clubs).

[0148] FIG. 18 shows an exemplary final hand 1800 resulting from the draw, which in this example was a Two of hearts. Because the final hand 1800 qualifies for a payout in accordance with the exemplary reverse payout table 401 of FIG. 15a, slot machine 100 preferably displays a message (e.g., in the video display area 138): "Congratulations! No pair pays 6 coins!"

[0149] While in the above example the player decided to play in reverse payout mode only after seeing his initially dealt hand, according to some other embodiments of the present invention, the player may be prompted and/or request to select a payout mode before the initial hand is dealt, and/or even after one or more draw cards are provided to the player. A player may be given multiple opportunities to select a payout mode, and in some embodiments may elect different modes within the same round of play.

[0150] Referring to FIG. 19, a flow chart 1900 represents an exemplary embodiment of the present invention that may be performed by a gaming device, including, without limitation, a video poker machine.

[0151] The video poker machine deals an initial hand to a player (step 1905). For example, the player places a wager at a Jacks or Better 6/9 video poker machine and actuates a "DEAL" button, and in response the video poker machine displays five cards of the initial hand in a video display area 138. In some alternative embodiments, the player may not place a wager until after viewing the initial hand, or may place an additional wager after viewing the initial hand (e.g., when selecting a payout mode, as discussed herein). The video poker machine determines whether the player wants to play in reverse payout mode (step 1910). For example, the player actuates a button either before or after viewing the initial hand. In another example, the video poker machine provides an offer to the player to play the hand in reverse payout mode, and receives a response from the player. For instance, the video poker machine may provide a visual and/or audio message or prompt to the player, asking the player if he would like to bet that the final hand will be a "low hand", and the player may respond by actuating a button (e.g., an "ACCEPT" button, a "NO" button). In some alternative embodiments, the player may place a wager after deciding what payout mode he would like to pursue, or may be required to place an additional wager (e.g., if a first wager was made before the initial deal).

[0152] If the player wants to continue play in reverse payout mode, the gaming device preferably determines the highest expected value play based on the initial hand (step 1915). For example, the video poker machine may determine which cards of the initial hand to hold (and/or which cards to discard). Some techniques for determining the highest expected value play are discussed herein, and others may be readily apparent to those skilled in the art. According to some embodiments of the present invention, the gaming device may rank possible plays or strategies according to their respective expected value. In some embodiments, the gaming device will use the highest expected value play (i.e. the highest ranked play in terms of expected value). In some alternative embodiments, the gaming device may use a strategy that is associated with the highest expected value.

For example, the gaming device may select the second highest expected value play, or any other play, or may select a play at random from a set of plays having the top five highest expected values, or any other set of plays.

[0153] The video poker machine determines a final hand based on the highest expected value play (step 1920) and determines a reverse mode payout for the player based on the final hand (step 1925). For example, based on the highest expected value play, the video poker machine may discard one or more cards and then deal replacement cards for any cards that are discarded, in a manner known in the art, to determine a final hand. To determine the reverse mode payout for the hand, the video poker machine preferably compares the final hand to a reverse payout table (such as those depicted in FIGS. 15a and 15b). The video poker machine provides the determined payout to the player (step 1930). However, if it is determined that the player does not want to play in reverse mode (step 1910), then play continues in normal mode (step 1935).

[0154] As discussed variously herein, in accordance with some embodiments of the present invention, a gaming device, such as a slot machine or a video poker machine, is operable to determine payouts according to an alternate, or reverse, payout table. According to some embodiment of the present invention a gaming device randomly generates one of many possible outcomes for each play. The gaming device includes a wager selector indicating a wager, a memory device and a payout selector. The memory device stores a normal set of data correlating possible outcomes to a normal set of payout information and a reverse set of data correlating possible outcomes to a reverse set of payout information. The reverse set of payout information describes payouts consisting of amounts which are less than or equal to twice said wager. The payout selector indicates which set of data, the normal or reverse set of data, the gaming device is to access.

[0155] According to various embodiments of the present invention a gaming device randomly generates one of many possible outcomes for each play and includes a wager selector indicating a wager, a memory device and a payout selector. The memory device stores a normal set of data correlating possible outcomes to a normal set of payout information and a reverse set of data correlating possible outcomes to a reverse set of payout information. The reverse set of data includes two subsets: a first subset of outcomes which correspond to payout information describing positive payout amounts in both the normal and reverse sets of data and a second subset of outcomes which correspond to payout information describing payouts consisting of amounts which are less than or equal to twice the wager. The payout selector indicates which set of data, the normal or reverse set of data, the gaming device is to access.

[0156] According to some embodiments of the present invention, a gaming device randomly generates one of many possible outcomes for each play and includes a wager selector indicating a wager, a memory device and a payout selector. The memory device stores a normal set of data correlating possible outcomes to a normal set of payout information and a reverse set of data correlating possible outcomes to a reverse set of payout information. The reverse set of data describes winning outcomes and losing outcomes wherein the ratio of winning outcomes to losing outcomes is greater than one.

[0157] In one or more embodiments of the present invention, a method for operating a gaming device includes the steps of identifying a wager, storing a normal set of data correlating possible outcomes to a normal set of payout information, and storing a reverse set of data correlating possible outcomes to a reverse set of payout information. The reverse set of payout information describes payouts consisting of amounts which are less than or equal to twice the wager. The method also includes the step of identifying a data set selection indicating which set of data, the normal or reverse set of data, the gaming device is to access. The method further includes the steps of generating a random resultant outcome and determining a resultant payout based on the wager, the data set selection and the resultant outcome.

[0158] According to one or more alternative embodiments of the present invention, overlay device 139 may be used to display video entertainment to a player. For example, during a gaming session at slot machine 100, video images from broadcast or cable television sources may be projected onto overlay device 139. In this way, a player is able to watch his favorite television program while simultaneously being able to view the resolution of reels 132, 134, and 136 (e.g., viewable through the overlay device 139). The broadcasting of sporting events, for example, might be particularly helpful to players who had made sportsbook wagers on their favorite sports teams. For instance, rather than having to look up toward ceiling-mounted television monitors, a player could enjoy a game without interrupting his slot machine session. In some embodiments, the player could even be offered the opportunity to watch three different sports games at the same time, with each game appearing over one of the reels 132, 134, and 136. Other types of information and entertainment content that may be displayed to a player will be recognized by one of ordinary skill in the art after reading the present application.

[0159] In some other embodiments of the present invention, text messages may be displayed on overlay device 139 (e.g., scrolling across the display) to entertain or inform the player. For example, a player might be presented with a menu of major league baseball games currently in action. The player selects one of the games, and a scrolling "ticker" of game information rolls across overlay device 139 while he plays slot machine 100. For example, such an information stream might be taken from the closed captioning data stream of the broadcast signal, or could be received from a third party providing live game updates. Similar information scrolling embodiments could be used to display headline news updates, stock tickers, and the like. Such information could of course also be presented in a more static embodiment. For example, a joke of the day/hour, or horoscope, could be displayed. A horoscope could even be personalized for the player's birth date (e.g., retrieved from the player database 744 of the slot network server 600). In a sports-related embodiment, players could store current sports bets with the slot network server 600. In this way, a player at slot machine 100 could be updated with the current status of each bet as the games progressed, via overlay device 139.

[0160] In yet another embodiment, statistics related to a gaming session may be displayed to a player via overlay device 139. For example, the player could view a graph representing his win/loss for the last trailing half hour of play on the slot machine 100, allowing him to make better

decisions as to whether the machine is “hot” or “cold.” Other statistics could be displayed, such as the length of the longest win streak for the current gaming session, the number of times that a particular outcome had been achieved, the number of times that a flush draw in video poker had been successful, the number of times that a bonus round had been reached in the last hour, etc. Other types of game-related information that may be displayed to a player will be recognized by one of ordinary skill in the art after reading the present application.

[0161] According to some embodiments, marketing information might also be advantageously displayed on overlay device 139. For example, a player playing the slot machine 100, without using a player tracking card, might trigger slot machine 100 (e.g., based on a predetermined condition monitored by the slot machine 100) to make an offer such as, “Sign up now for a player card and get a lunch buffet for free”. By displaying such offers to the player via the overlay device 139, the offers may be presented directly in the line of vision of the player (e.g., as he is watching outcomes on the reels 132, 134, and 136), making it less likely that the player will miss them.

[0162] Although the present invention has been described in terms of certain preferred embodiments, other embodi-

ments that are apparent to those of ordinary skill in the art are also intended to be within the scope of the present invention. Accordingly, the scope of the present invention is intended to be limited only by the claims appended hereto.

1. A method comprising:

- determining an initial hand of a poker game;
 - displaying a representation of the initial hand to a player;
 - after displaying the representation of the initial hand to the player,
 - receiving a request by the player to continue play of the poker game in accordance with a reverse payout mode;
 - determining a highest expected value play based on the initial hand;
 - determining a final hand based on the highest expected value play; and
 - in accordance with the reverse payout mode, determining a payout amount based on the final hand.
- 2-17. (canceled)

* * * * *