



US 20130035149A1

(19) **United States**

(12) **Patent Application Publication**  
**Oakes**

(10) **Pub. No.: US 2013/0035149 A1**

(43) **Pub. Date: Feb. 7, 2013**

(54) **SYSTEMS AND METHODS FOR RETAIL LOTTERY-STYLE GAMES**

**Publication Classification**

(75) Inventor: **James Allan Oakes**, Rye (GB)

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

(73) Assignee: **Roboreus Limited**, London (GB)

(52) **U.S. Cl.** ..... **463/17**

(21) Appl. No.: **13/584,322**

(57) **ABSTRACT**

(22) Filed: **Aug. 13, 2012**

Systems and methods for retail lottery-style games are disclosed. In one particular exemplary embodiment, a map-based lottery game is established, by at least one processor, that is scheduled to have a lottery drawing, where the map-based lottery game includes a gameboard made up of a plurality of units each selectable to represent an entry in the lottery game. In addition, a plurality of game entries are received each identifying a unit on the gameboard either with an identifier of the unit or with a lottery combination corresponding to the unit and, at least one winning entry from the plurality of game entries is selected by selecting among the plurality of units on the gameboard or among the units identified by the plurality of game entries.

**Related U.S. Application Data**

(63) Continuation-in-part of application No. 12/180,163, filed on Jul. 25, 2008.

(60) Provisional application No. 61/522,927, filed on Aug. 12, 2011.

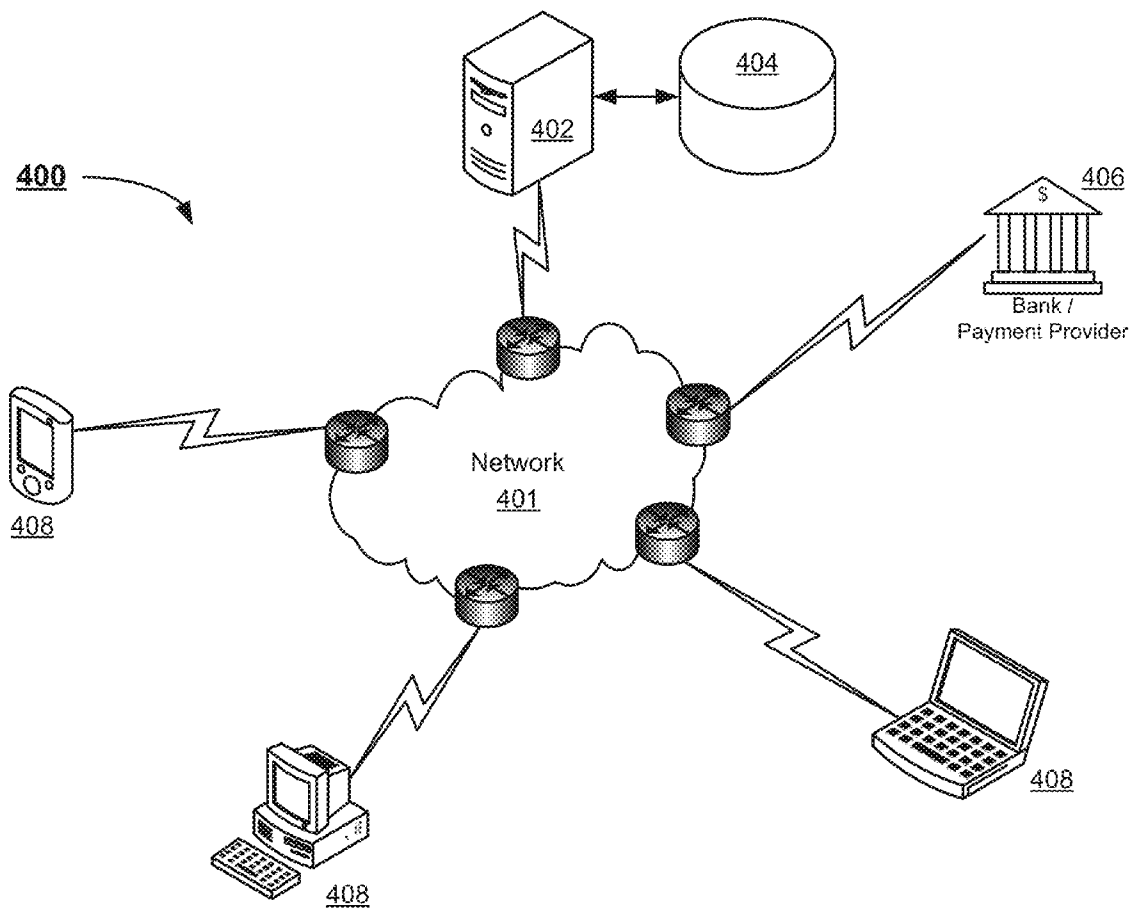


FIG. 1

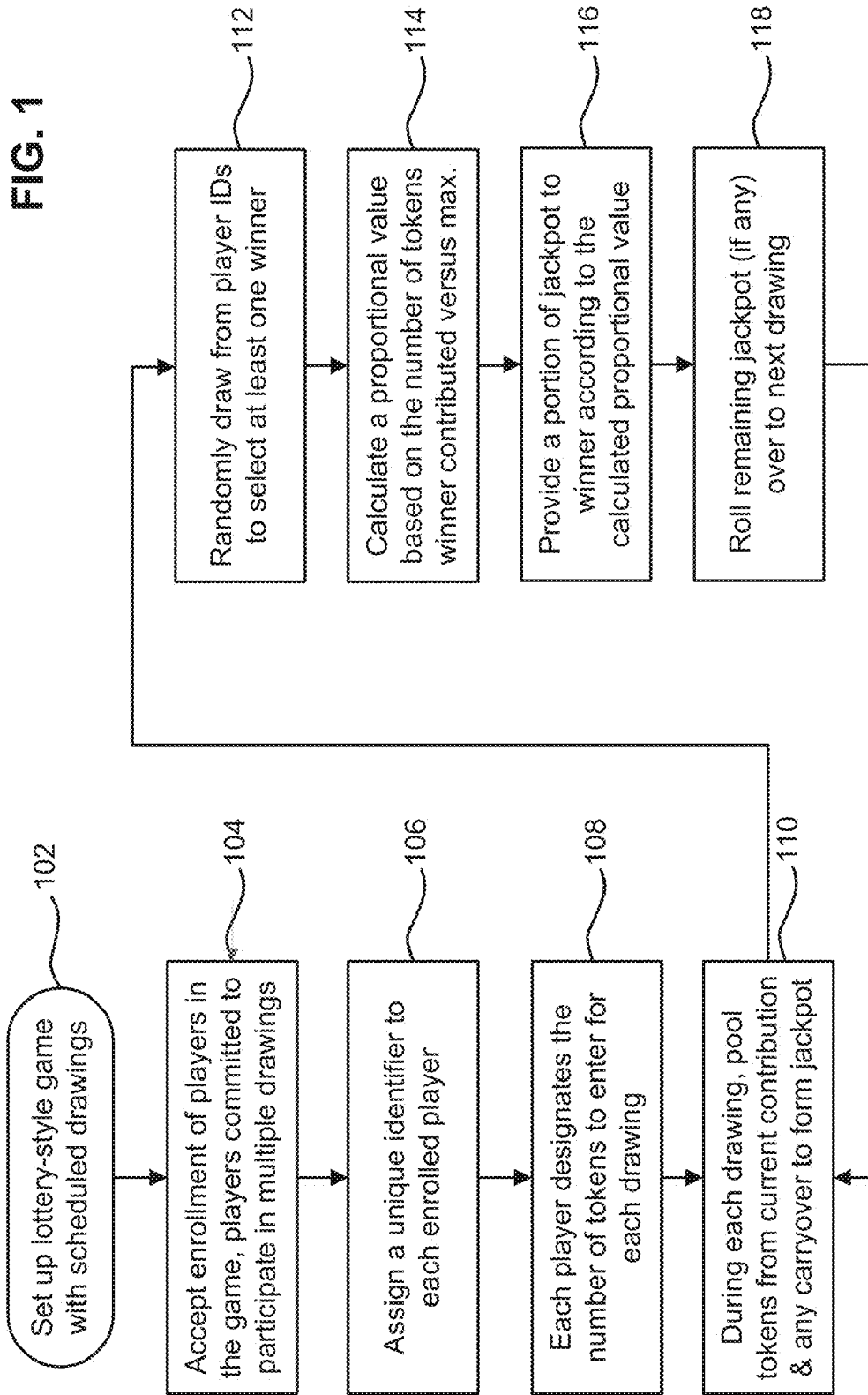
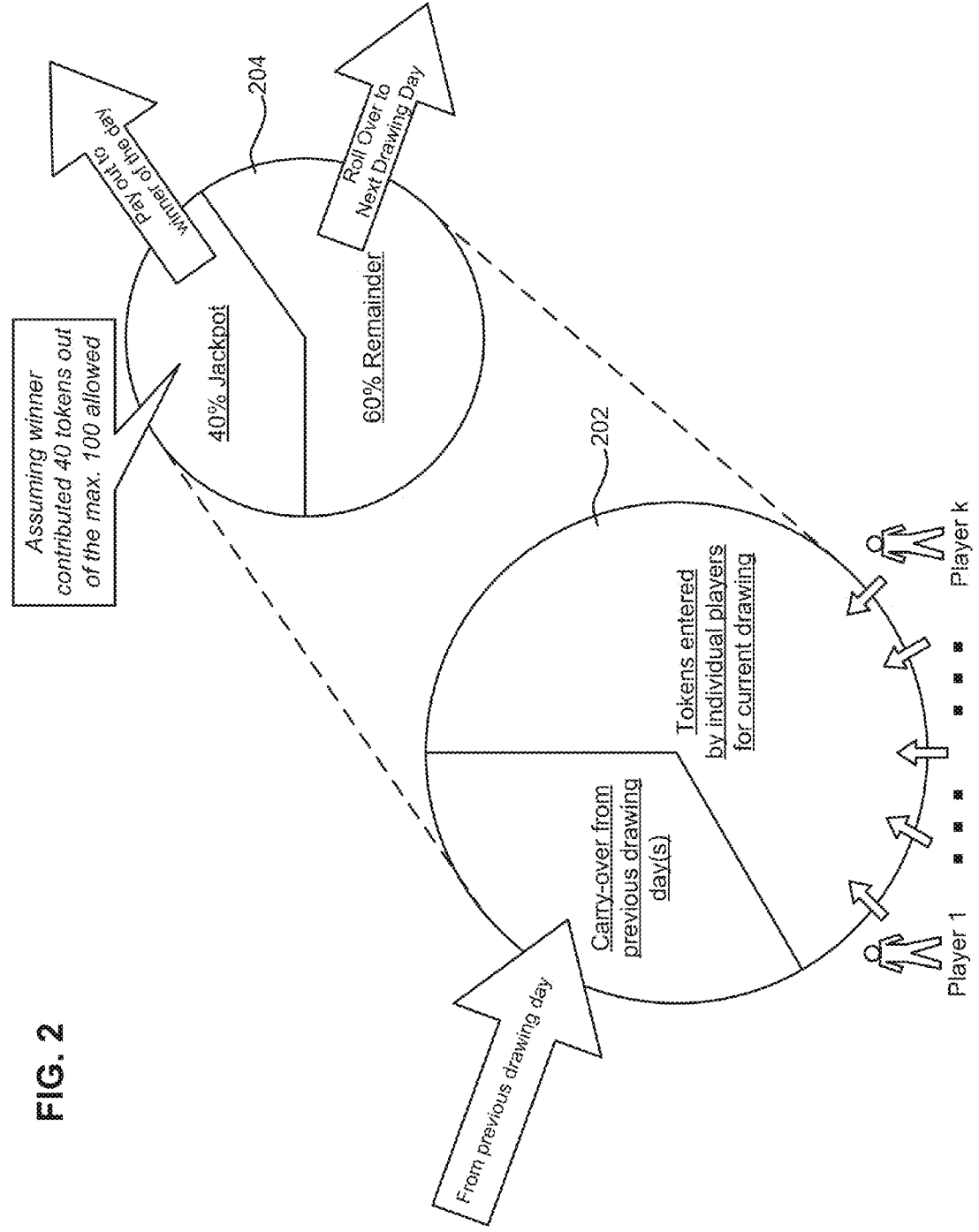


FIG. 2



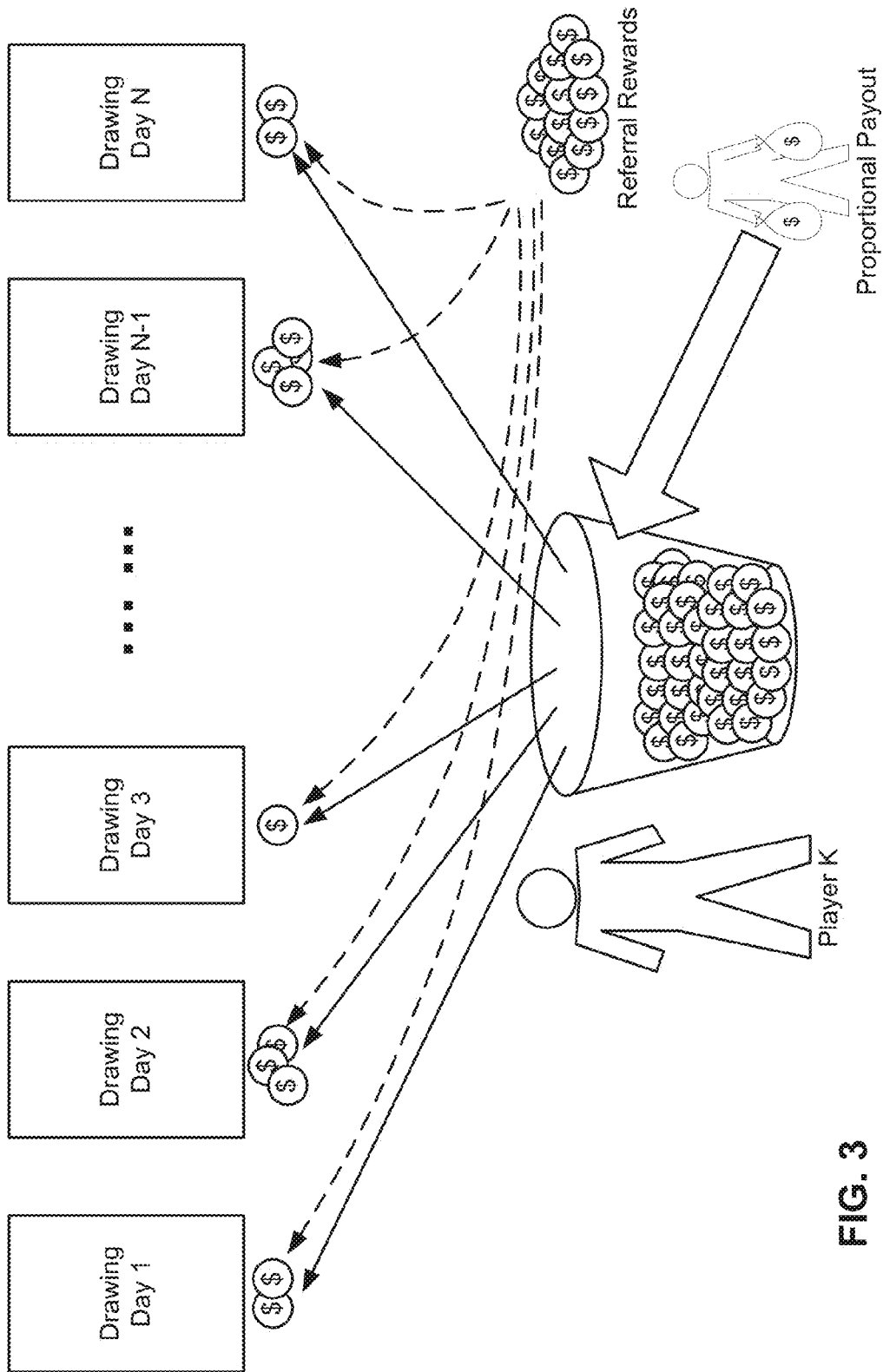


FIG. 3

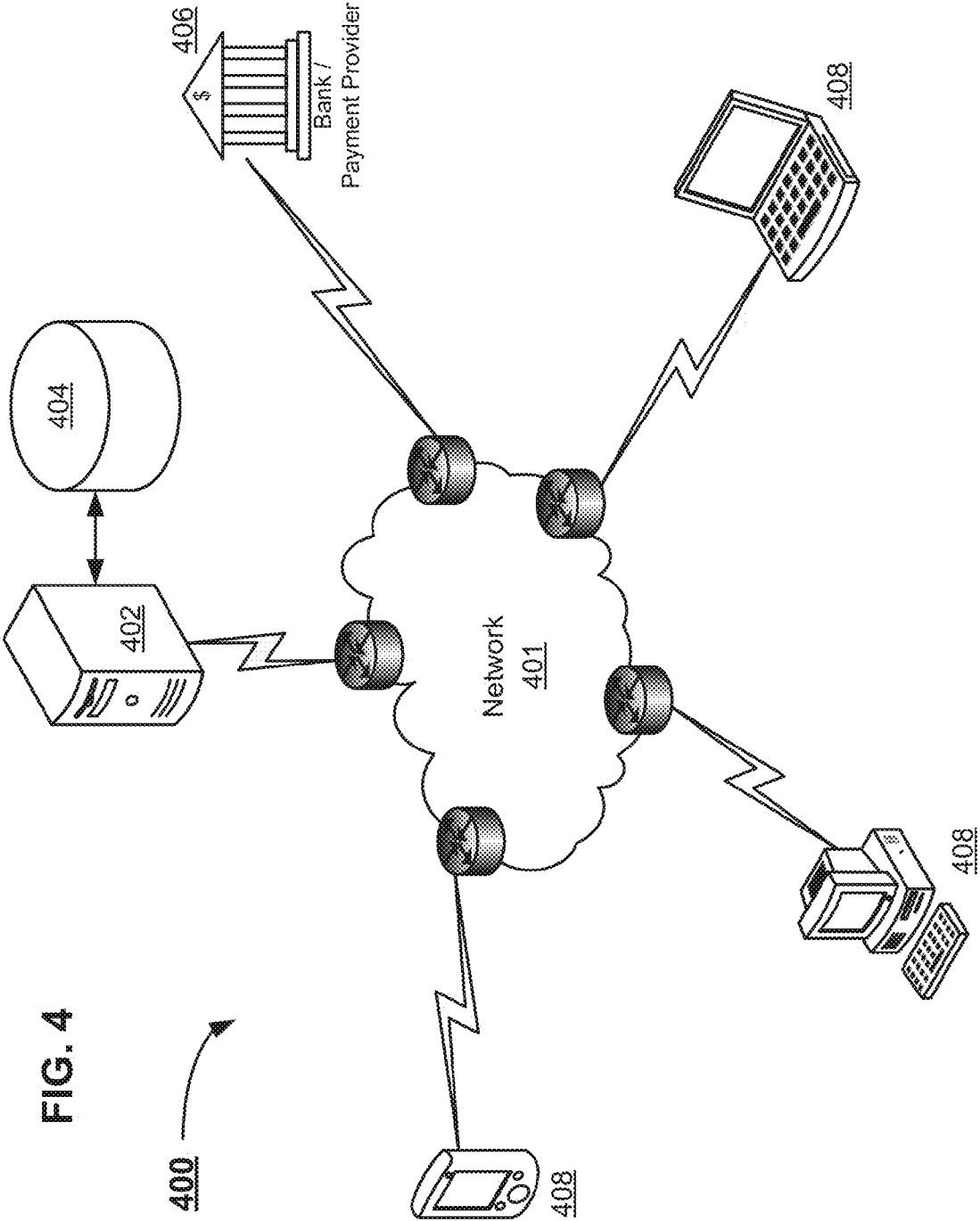
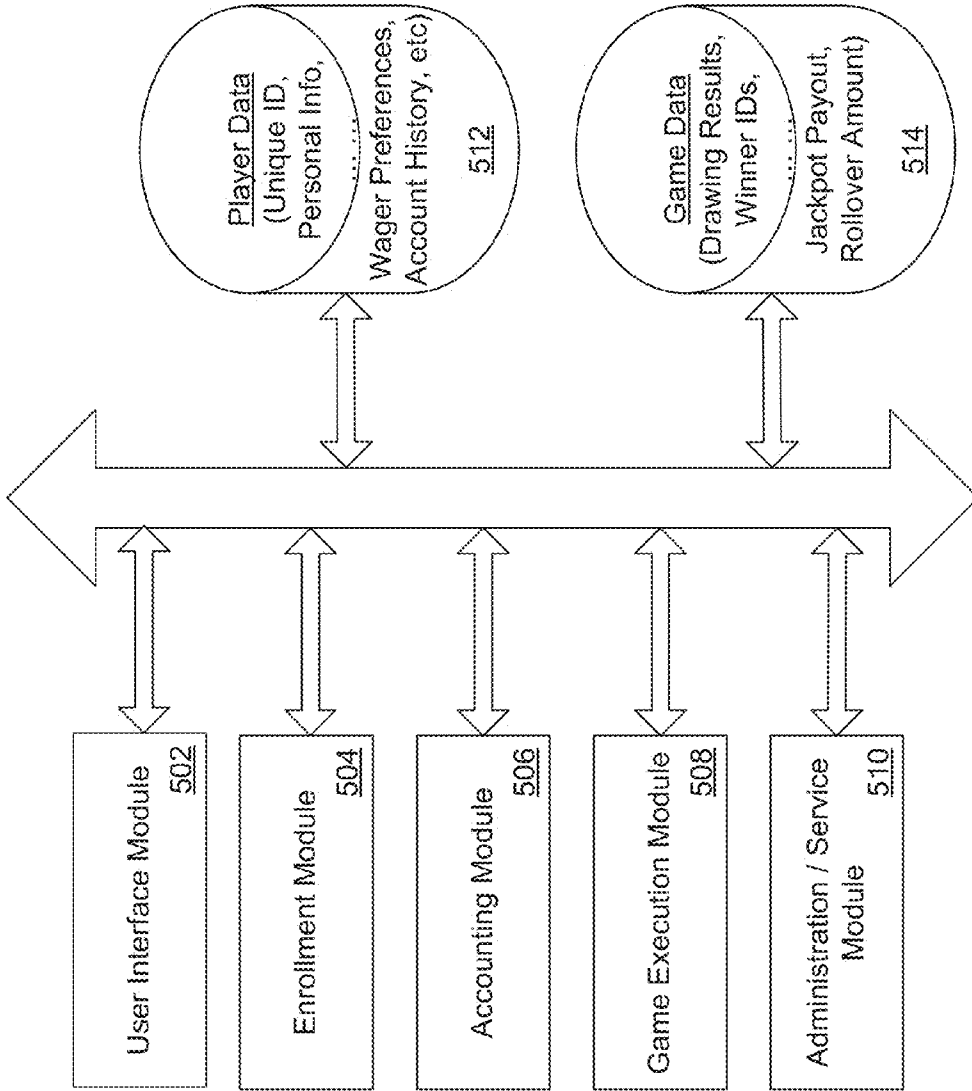
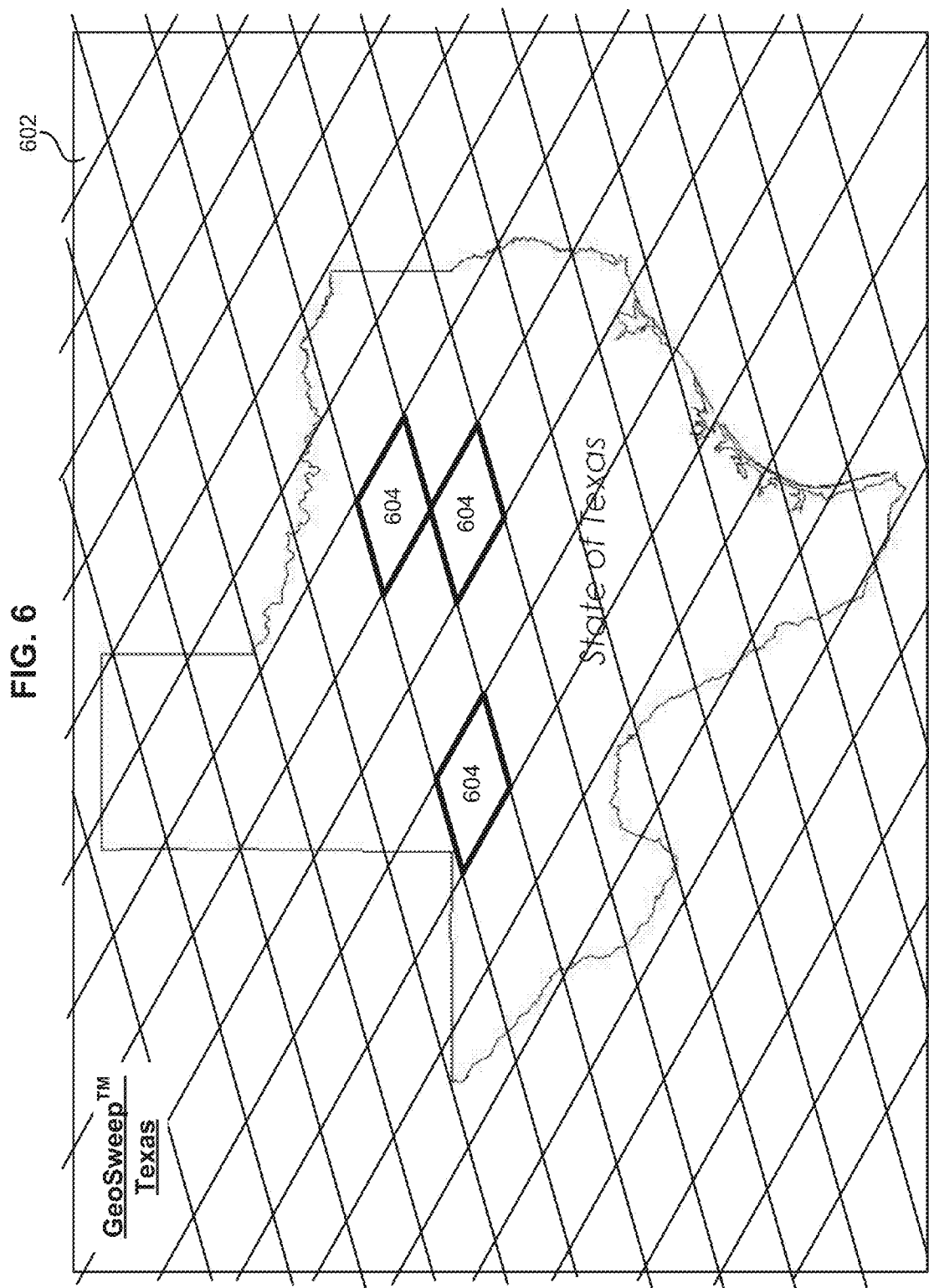


FIG. 4

FIG. 5





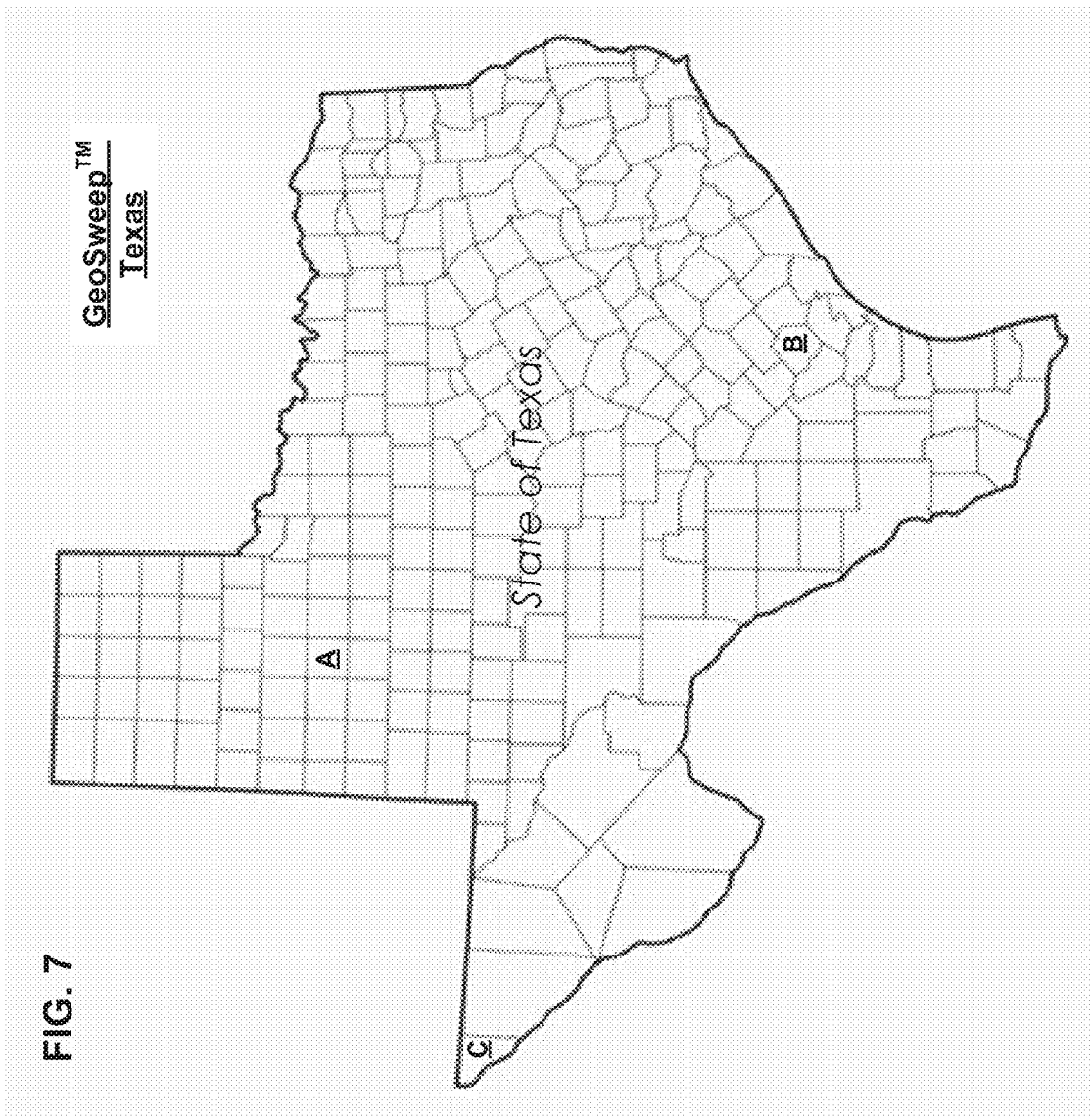




FIG. 8



FIG. 9

Balls Matched	Bonus Ball Matched	Odds	Winning Squares	Prize
5	1	195,249,054	1	Jackpot
5	0	5,138,133	38	\$ 250,000.00
4	1	723,145	270	\$ 10,000.00
4	0	19,030	10,260	\$ 150.00
3	1	13,644	14,310	\$ 150.00
3	0	359	543,780	\$ 7.00
2	1	787	248,040	\$ 10.00
1	1	123	1,581,255	\$ 3.00
0	1	62	3,162,510	\$ 2.00

**SYSTEMS AND METHODS FOR RETAIL LOTTERY-STYLE GAMES**

**CROSS REFERENCE TO RELATED APPLICATIONS**

**[0001]** The present application claims priority to, and is a continuation-in-part of, U.S. patent application Ser. No. 12/180,163, filed on Jul. 25, 2008, which is incorporated herein by reference in its entirety. The present application further claims priority to and incorporates by reference U.S. Provisional Application No. 61/522,927, filed Aug. 12, 2011.

**FIELD OF THE INVENTION**

**[0002]** Embodiments of the present invention relate generally to games of chance. More specifically, the present invention relates to systems and methods for lottery-style games.

**BACKGROUND OF THE INVENTION**

**[0003]** Lottery is a popular game of chance in which a number of players contribute to form a jackpot that is later awarded, wholly or partially, to one or more winners. The participating players pay money or contribute other things of value in exchange for lottery tickets. Typically, each lottery ticket bears a combination of numbers or other symbols, and a winning ticket has to at least partially match a randomly generated set of numbers or symbols. In a properly operated lottery game, any one of the outstanding lottery tickets could be selected in a random drawing as a winning ticket, entitling its holder to some or all of the jackpot prize.

**[0004]** Sweepstakes in United States may be considered one special type of lottery games which are free to enter and are typically sponsored by merchants for promotional marketing purposes. In United Kingdom, a sweepstake is technically a lottery game in which the prize is financed through the tickets sold. Small-scale sweepstakes among private parties (e.g., colleagues and classmates) may also be considered lottery games which are often related to ongoing sports events.

**[0005]** Lottery games come in different formats. For example, the jackpot of a lottery game may be either a fixed cash amount or a certain percentage of ticket revenue. The combination of numbers on each lottery ticket could be a unique one, or each player may be allowed to select his or her own lucky numbers, making it possible for multiple tickets to share a same combination. Lottery games can be played either online or offline. The most popular lottery games, such as Powerball™, Mega Millions™, and Euro Millions™, are mostly paper-based, requiring the purchase of actual tickets, although some are now starting to open to online participants. A few lottery games can be played completely online. That is, instead of purchasing a paper ticket and filling in desired numbers with a pencil, an online player can purchase an electronic (or virtual) lottery ticket and select a desired combination via a web interface such as an Internet browser.

**[0006]** In all traditional lottery games, lottery tickets are sold in predetermined, fixed denominations, for example, one dollar per ticket. Accordingly, one winning ticket will entitle its holder to an entire unit of a corresponding winning prize. Proportional value lottery games have been proposed, for example, in U.S. Pat. Nos. 6,296,569 and 7,351,142, but none appears to have been commercially implemented. Both of those patents describe the issuance of proportional denomination lottery tickets, online or at a point of sale (POS). For

example, in any transaction involving change under a dollar, the change can be converted to a proportional denomination share of a full-unit (one-dollar) lottery ticket. If the full-unit lottery ticket is qualified for a prize, the holder of the proportional denomination ticket will be entitled to a fraction of the prize. For instance, if a one-dollar ticket matching all the winning numbers would entitle its holder to a jackpot amount, then a 25-cent proportional ticket entitles its holder to 25% of the jackpot.

**[0007]** All the existing types of lottery games appear to share a few common characteristics. First, they all have to issue some kind of lottery tickets, whether paper or electronic, full-denomination or proportional. The purposes for issuing lottery tickets are two-fold. The tickets bear numerical combinations or patterns to be compared to the randomly generated winning combination or pattern. The tickets also serve as proof of participation in the lottery games. However, the entire mechanism of generating, drawing, and matching tickets could impose significant overhead costs on the operation of lottery games.

**[0008]** Second, participation in traditional lottery games depends heavily on player impulse or enthusiasm, which causes ticket revenue to fluctuate. Except for a handful of gambling fanatics, most people only purchase lottery tickets occasionally. A loss in one game might cause an ordinary player to stop playing for a while. Also, public sentiment towards a lottery game often varies with the amount of jackpot prize available at the time. There seems to be a general belief that a one-dollar ticket somehow has a better chance of winning when the jackpot reaches several million dollars or more. Therefore, when the total jackpot snowballs into an unusually large amount, the public often become increasingly interested in the game. Once the jackpot is won, a period of stagnation typically follows the news-generating big win. For all these reasons, ticket revenues from traditional lottery games tend to swing with time and seldom generate a steady cash flow.

**[0009]** Third, players in a traditional lottery game have no direct or perceivable incentive for bringing more players into the game. Theoretically, an existing player may be indirectly benefited if more players join the lottery game, because the increased participation will increase the size of jackpot the existing player could potentially win. However, that potential benefit may not be tangible enough to encourage referrals of additional players. In addition, the existing player's chance of winning does not increase with the number of new players.

**[0010]** Furthermore, traditional lottery games including sweepstakes are pure games of chance and typically do not require any player skill or strategy. Every player's chance of winning is only affected by the number of lottery tickets he or she buys. One player's chance of winner is independent of another player's chance of winning. As a result, there tends to be very little interaction among lottery participants.

**[0011]** In view of the foregoing, it may be understood that there are significant problems and shortcomings associated with traditional lottery games.

**[0012]** As disclosed in parent applications U.S. application Ser. Nos. 12/180,163 and 12/180,201, filed on Jul. 25, 2008, incorporated herein and described in-part below, lottery-style games are disclosed that are played using an interactive computing device such as a computer or mobile phone with an internet connection. In many cases, this may present an implementation issue for the current lottery market since over 95% of all lottery sales are currently made in retail stores,

done using a paper betting slip that is scanned and processed by an online terminal (which is operated by the shopkeeper). Such online terminals are usually only set up to handle input in the form of said paper betting slips. Thus, in view of such issues, it may be understood that there are certain aspects of these disclosed lottery-style games that can be further improved upon.

#### SUMMARY OF THE INVENTION

**[0013]** Systems and methods for lottery-style games are disclosed. In one particular aspect, a computer-implemented method for lottery-style games is disclosed. In one particular embodiment, the method includes the step of establishing, by at least one processor, a map-based lottery game that is scheduled to have a lottery drawing, where the map-based lottery game includes a gameboard comprising of a plurality of units, each selectable to represent an entry in the lottery game. In addition, a plurality of game entries are received each identifying a unit on the gameboard either with an identifier of the unit or with a lottery combination corresponding to the unit; and at least one winning entry from the plurality of game entries is selected by selecting among the plurality of units on the gameboard or among the units identified by the plurality of game entries.

**[0014]** In another aspect of the present invention, a system for lottery-style games is disclosed to include a processor, at least one storage device coupled to the processor, and a user interface coupled to the processor via one or more networks. Furthermore, in one embodiment, the processor is adapted to communicate with the at least one storage device and the user interface to execute instructions to establish a map-based lottery game that is scheduled to have a lottery drawing, where the map-based lottery game includes a gameboard comprising a plurality of units each selectable to represent an entry in the lottery game. Furthermore, the processor is adapted to receive a plurality of game entries each identifying a unit on the gameboard either with an identifier of the unit or with a lottery combination corresponding to the unit; and to select at least one winning entry from the plurality of game entries by selecting among the plurality of units on the gameboard or among the units identified by the plurality of game entries.

#### BRIEF DESCRIPTION OF THE DRAWINGS

**[0015]** In order to facilitate a fuller understanding of the present invention, reference is now made to the accompanying drawings, in which like elements are referenced with like numerals. These drawings should not be construed as limiting the present invention, but are intended to be exemplary only.

**[0016]** FIG. 1 is a flow chart illustrating an exemplary method of facilitating lottery-style games in accordance with one embodiment of the present invention.

**[0017]** FIG. 2 illustrates the flow of tokens from the perspective of a lottery game operator in accordance with one embodiment of the present invention.

**[0018]** FIG. 3 illustrates the flow of tokens from the perspective of a player in a lottery game in accordance with one embodiment of the present invention.

**[0019]** FIG. 4 is a block diagram illustrating an exemplary system for facilitating lottery-style games in accordance with one embodiment of the present invention.

**[0020]** FIG. 5 is a block diagram illustrating exemplary software and data-storage modules for facilitating lottery-style games in accordance with one embodiment of the present invention.

**[0021]** FIG. 6 shows a map for an exemplary GeoSweep game in accordance with one embodiment of the present invention.

**[0022]** FIG. 7 illustrates an alternative method of establishing a grid or land boundaries in an exemplary GeoSweep game in accordance with one embodiment of the present invention.

**[0023]** FIG. 8 illustrates another alternative method of establishing a grid or land boundaries in an exemplary GeoSweep game in accordance with one embodiment of the present invention.

**[0024]** FIG. 9 is a flow chart illustrating an exemplary method of facilitating retail lottery-style games in accordance with one embodiment of the present invention.

**[0025]** FIG. 10 illustrates an exemplary GGR Gameboard utilizing the 6-part lottery number.

**[0026]** FIG. 11 is an exemplary table of an exemplary prize payout for a lottery-style game in accordance with one embodiment of the present invention.

#### DETAILED DESCRIPTION OF THE INVENTION

**[0027]** Referring to FIG. 1, there is shown a flow chart illustrating an exemplary method of facilitating lottery-style games in accordance with one embodiment of the present invention.

**[0028]** In step 102, a lottery game may be set up. The lottery game may be an ongoing one that is scheduled to have a plurality of lottery drawings over a period of time. For example, the lottery drawings may occur on a periodic basis, such as once every hour, one or more times every calendar day or every business day, one or more times every week, or a predetermined number of times per month or year. As the lottery game is set up, a set of rules, terms and conditions may be published or otherwise communicated to potential participants. The rules may define how the lottery game is operated and how the lottery drawings are conducted, as well as calculation and payout of prizes, as will be described in more detail below. The terms and conditions may specify rights and obligations of persons participating in the lottery game and lottery drawings.

**[0029]** In preferred embodiments of the present invention, the lottery game is established online and accessible via an Internet website. The lottery game may also be implemented in connection with one or more social networking websites, such as Facebook™, MySpace™, or LinkedIn™. Alternatively, the lottery game may also be implemented in connection with one or more virtual reality games such as Second Life™ or other multi-player video games. The lottery game may be either an add-on or an integrated part of an associated website, wherein participation in the lottery game may enhance a player's experience at the associated website or vice versa. According to some embodiments, the lottery game and lottery drawings may be implemented at least partially offline, without requiring every participant to have computer or Internet access.

**[0030]** In step 104, players may be enrolled in the lottery game. Each person wishing to join the lottery game may be required to make a commitment to participate in a number of the scheduled lottery drawings. In one exemplary enrollment process, a player may (a) manifest consent to the set of rules,

terms and conditions established in the lottery game and (b) deposit or pledge some amount of money or other things of value to be contributed to the game. The amount of initial deposit or pledge may depend on such factors as how many lottery drawings the player is obligated to participate in, how much wager the player is to enter for each drawing, the player's credit ratings, and so on.

**[0031]** Enrollment of players may be taken via a web interface, by mail, or through other communication means. When the lottery game is implemented in connection with a social networking website or other membership sites, enrollment in the lottery game may be simplified with the existing membership information. Alternatively, the lottery game operator, administrator, or personnel may receive and approve enrollment in person. In some instances, new players may join through referrals and/or gift membership.

**[0032]** In step 106, each enrolled player may be assigned one or more unique identifiers. Each player identifier (or player ID) may be a text string, a serial number, or other symbols. According to one embodiment, each player ID may be associated with a "Lucky Star" of the player's choice. According to some embodiments, each player ID may comprise a machine readable portion (e.g., an alphanumeric string) and a human recognizable portion (e.g., a logo, icon or catch phrase). For a player, one of the assigned player IDs may be used as a username for logging into an Internet-based lottery game. Or, the player may choose a different username to log in but is still able to manage multiple player IDs assigned to that player. The assigned player IDs may be imprinted or encoded on a membership card.

**[0033]** In the drawings or games described herein, each registered player can participate with one or multiple player IDs. When participating with multiple player IDs, the rules regarding each of the multiple player IDs are the same as if each player ID is owned and controlled by a single player. For ease of illustration, it is assumed in the following description that each player participates with a single player ID.

**[0034]** In step 108, each player may designate the number of tokens to enter for each drawing. That is, with respect to each lottery drawing the player is committed to participate in, the player may specify a wager amount that is typically measured in the number of tokens. As used herein, a "token" may be or represent any physical or virtual thing of value that can be counted or quantified. For example, a token may be or represent one or more units of cash or credit. Or, a token may be or represent one or more points that are exchangeable for things of value. According to one embodiment of the present invention, one token may be the equivalent of one cent ( $1/100$  of a dollar). According to another embodiment, one token may be or represent one value point that may be used to exchange for music downloads, cell phone ring-tones, or for other online or in-store purchases. According to yet another embodiment, one token may represent one unit of a game score in an online video game or a virtual society. According to still another embodiment, one token may be or can be exchanged for one or more units of mobile telephone airtime or long-distance telephone minutes.

**[0035]** The players may purchase tokens with their initial deposits. They may set up electronic fund transfers and/or automatic credit card payments to refill their accounts with tokens. A player's account may be replenished automatically as soon as its balance falls below a preset lower limit. Apart from winning or purchasing refills, the players may alternatively or additionally obtain tokens through bartering or by

engaging in certain activities. For example, a player may exchange credit card cash-back bonus points for tokens. The player may also take part in online surveys, view online advertisements, or increase activity level at social networking or blogger websites to earn tokens.

**[0036]** The number of tokens designated for each lottery drawing should typically fall within a certain range. For lottery drawings that take place on a daily basis, for example, there may be a daily minimum and a daily maximum for the number of tokens a player can contribute per player ID. According to one embodiment of the present invention, the daily minimum may be one token (e.g., one cent or one pence) and the daily maximum may be one hundred tokens (e.g., one dollar or one pound). The number of tokens that a player designates for each drawing may be any of a fixed value between and including the daily minimum and the daily maximum. Alternatively, the player may configure the daily wager to be a variable amount. To have a minimal level of participation in the lottery game (thus a more predictable revenue from the game), the game system may be configured to prevent players from lowering their preset daily wager amount for any upcoming drawings.

**[0037]** For each lottery drawing, a jackpot prize may be formed, in step 110, from two sources: (a) tokens contributed by players who participate in that drawing, and (b) tokens carried over from one or more previous drawings, if available. Tokens from the two sources may be pooled together into one jackpot. The jackpot (or a portion thereof) may account for a maximum payable amount for a winner of that lottery drawing.

**[0038]** In step 112, a random drawing from the player IDs may be conducted to select at least one winner. Note that the word "random" does not require randomness in the most rigorous statistical sense as such randomness is difficult to achieve. Instead, the word "random" implies a fair drawing process that does not appear to favor any one player more than any other player. The random (fair) drawing from the player IDs may be achieved in a number of computational methods as are well known in the gaming industry. According to some embodiments of the present invention, a single winner may be selected for each lottery drawing. According to some alternative embodiments, two or more winners may be selected for each drawing and they may share a prize fund on equal footings or according to an award hierarchy.

**[0039]** Then, in step 114, a proportional value may be calculated based on the number of tokens the selected winner(s) contributed versus the maximum number allowed per player ID. In step 116, a fraction of the jackpot (or maximum payable prize) may be provided to the selected winner(s) according to the proportional value calculated in step 114 above. In step 118, the remainder of the jackpot prize may be rolled over to a next drawing. Unless one or more selected winners happen to have wagered the maximum number of tokens and therefore won the entire jackpot, there would always be some remaining jackpot to add to the jackpot of the next drawing. In addition, the enrollment rule ensures continuous participation in the ongoing lottery drawings. As a result, the jackpot may quickly snowball into a large amount, further increasing players' interest in the game.

**[0040]** For business advantages, it may be preferable to set the maximum number of tokens that each player ID can contribute to each drawing at a relatively low value. For example, if the daily maximum that can be entered for a daily drawing is one dollar, a player can contribute as little as one

cent but never more than one dollar. The player will not feel any significant financial impact or burden to continue playing the lottery game for many drawing days. By wagering the equivalent of pocket change on a daily basis, the player may still enjoy a decent chance of winning a substantial amount of money.

**[0041]** FIG. 2 illustrates the flow of tokens from the perspective of a lottery game operator in accordance with one embodiment of the present invention. For ease of illustration, it will be assumed that lottery drawings in the lottery game occur on a daily basis. On each drawing day, a pie chart **202** represents a jackpot prize and sources thereof, whereas a pie chart **204** represents the same jackpot prize (but shown separately for clarity) and disbursement therefrom. The pie chart **202** indicates that a first portion of the present drawing day's jackpot include tokens carried over from one or more previous drawing days. The pie chart **202** also indicates that second portion of the jackpot include tokens contributed by individual players for the current drawing. The pie chart **204** indicates that at least a fraction of the jackpot prize may be paid out to a winner of the day. Assuming there is a single winner and that player contributed 40 tokens out of the maximum 100 allowed, 40% of the jackpot prize may be paid out to the winner. In that case, the remaining 60% of the jackpot may be rolled over to a next drawing day.

**[0042]** FIG. 3 illustrates the flow of tokens from the perspective of a player in a lottery game in accordance with one embodiment of the present invention. The exemplary player, Player K, may be committed to participate in N lottery drawings occurring on N consecutive days, wherein N is an integer greater than one. The bucket of dollar-sign tokens represents an account balance for Player K. Player K may have started with a "full bucket" of tokens that were purchased upon enrollment. As described earlier, Player K may designate one or more tokens to be contributed to each daily drawing. The number of tokens designated may be constant or may vary day-to-day. As drawing days go by, unless Player K wins in one or more lottery drawings, Player K's account may be slowly depleted and may have to be replenished. If Player K happens to be picked as a winner in one of the drawings, the proportional payout from that drawing may also replenish Player K's account to some extent.

**[0043]** According to one embodiment of the present invention, Player K may also enjoy another source of tokens—referral rewards. In order to encourage Player K to refer additional players to join the lottery game, Player K may be awarded a number of tokens for each new player brought into the game. The referral rewards may be simply deposited into Player K's account. Alternatively, the referral rewards may be automatically entered into daily drawings on behalf of Player K and in addition to Player K's own contribution to the daily drawings. For example, for each new player that Player K received, one or more tokens may be added to Player K's daily wager amount. These additional tokens may be awarded to Player K as long as the newly referred player remains an active participant in the lottery drawings. Furthermore, the amount of referral rewards may be linked to activity level of the new player referred.

**[0044]** FIG. 4 is a block diagram illustrating an exemplary system **400** for facilitating lottery-style games in accordance with one embodiment of the present invention.

**[0045]** The system **400** may be or include a computer system. This embodiment of the present invention may be described in the general context of computer-executable

instructions, such as program modules, being executed by a computer. Generally, program modules include routines, programs, objects, components, data structures, etc. that perform particular tasks or implement particular abstract data types. A series of programmable instructions may be stored in a computer-readable medium performing the lottery-style gaming functions disclosed herein and to achieve technical effects in accordance with the disclosure. More exemplary software and data-storage modules will be described below in connection with FIG. 5.

**[0046]** The lottery-style games described herein may be entered into and/or played at one or more game terminals or kiosks on or near the premises of a casino, a department store, a shopping mall, or other suitable commercial sites. For example, potential participants in a lottery-style game might be limited by laws which prohibit online wagering with payment cards. It may be beneficial for those participants to visit, or have someone else visit on their behalf, a commercial outlet with above-mentioned game terminals or kiosks where they can lawfully register and/or play the lottery-style games. Once a player has registered and funded his/her membership, he/she may continue monitoring the daily progress of the game via Internet or other communication means. As needed, the player may occasionally re-visit the game terminals or kiosks to re-fill accounts associated with his/her player IDs.

**[0047]** Those skilled in the art will appreciate that the invention may be practiced with various computer system configurations, including hand-held wireless devices such as mobile phones or personal digital assistants (PDAs), multi-processor systems, microprocessor-based or programmable consumer electronics, minicomputers, mainframe computers, and the like. The invention may also be practiced in distributed computing environments where tasks are performed by remote processing devices that are linked through a communications network. In a distributed computing environment, program modules may be located in both local and remote computer storage media including memory storage devices.

**[0048]** The computer system may include a general purpose computing device in the form of a computer including a processing unit, a system memory, and a system bus that couples various system components including the system memory to the processing unit.

**[0049]** Computers typically include a variety of computer readable media that can form part of the system memory and be read by the processing unit. By way of example, and not limitation, computer readable media may comprise computer storage media and communication media. The system memory may include computer storage media in the form of volatile and/or nonvolatile memory such as read only memory (ROM) and random access memory (RAM). A basic input/output system (BIOS), containing the basic routines that help to transfer information between elements, such as during start-up, is typically stored in ROM. RAM typically contains data and/or program modules that are immediately accessible to and/or presently being operated on by processing unit. The data or program modules may include an operating system, application programs, other program modules, and program data. The operating system may be or include a variety of operating systems such as Microsoft Windows® operating system, the Unix operating system, the Linux operating system, the Xenix operating system, the IBM AIX™ operating system, the Hewlett Packard UX™ operating system, the Novell Netware™ operating system, the Sun Microsystems

Solaris™ operating system, the OS/2™ operating system, the BeOS™ operating system, the Macintosh™® operating system, the Apache™ operating system, an OpenStep™ operating system or another operating system of platform.

**[0050]** At a minimum, the memory includes at least one set of instructions that is either permanently or temporarily stored. The processor executes the instructions that are stored in order to process data. The set of instructions may include various instructions that perform a particular task or tasks, such as those shown in the appended flowcharts. Such a set of instructions for performing a particular task may be characterized as a program, software program, software, engine, module, component, mechanism, or tool. The system **400** may include a plurality of software processing modules stored in a memory as described above and executed on a processor in the manner described herein. The program modules may be in the form of any suitable programming language, which is converted to machine language or object code to allow the processor or processors to read the instructions. That is, written lines of programming code or source code, in a particular programming language, may be converted to machine language using a compiler, assembler, or interpreter. The machine language may be binary coded machine instructions specific to a particular computer.

**[0051]** Any suitable programming language may be used in accordance with the various embodiments of the invention. Illustratively, the programming language used may include assembly language, Ada, APL, Basic, C, C++, COBOL, dBase, Forth, FORTRAN, Java, Modula-2, Pascal, Prolog, REXX, and/or JavaScript, for example. Further, it is not necessary that a single type of instruction or programming language be utilized in conjunction with the operation of the system and method of the invention. Rather, any number of different programming languages may be utilized as is necessary or desirable.

**[0052]** Also, the instructions and/or data used in the practice of the invention may utilize any compression or encryption technique or algorithm, as may be desired. An encryption module might be used to encrypt data. Further, files or other data may be decrypted using a suitable decryption module.

**[0053]** The computing environment may also include other removable/non-removable, volatile/nonvolatile computer storage media. For example, a hard disk drive may read or write to non-removable, nonvolatile magnetic media. A magnetic disk drive may read from or writes to a removable, nonvolatile magnetic disk, and an optical disk drive may read from or write to a removable, nonvolatile optical disk such as a CD-ROM or other optical media. Other removable/non-removable, volatile/nonvolatile computer storage media that can be used in the exemplary operating environment include, but are not limited to, magnetic tape cassettes, flash memory cards, digital versatile disks, digital video tape, solid state RAM, solid state ROM, and the like. The storage media are typically connected to the system bus through a removable or non-removable memory interface.

**[0054]** The processing unit that executes commands and instructions may be a general purpose computer, but may utilize any of a wide variety of other technologies including a special purpose computer, a microcomputer, mini-computer, mainframe computer, programmed micro-processor, micro-controller, peripheral integrated circuit element, a CSIC (Customer Specific Integrated Circuit), ASIC (Application Specific Integrated Circuit), a logic circuit, a digital signal processor, a programmable logic device such as an FPGA

(Field Programmable Gate Array), PLD (Programmable Logic Device), PLA (Programmable Logic Array), RFID integrated circuits, smart chip, or any other device or arrangement of devices that is capable of implementing the steps of the processes of the invention.

**[0055]** It should be appreciated that the processors and/or memories of the computer system need not be physically in the same location. Each of the processors and each of the memories used by the computer system may be in geographically distinct locations and be connected so as to communicate with each other in any suitable manner. Additionally, it is appreciated that each of the processor and/or memory may be composed of different physical pieces of equipment.

**[0056]** A user may enter commands and information into the computer through a user interface that includes input devices such as a keyboard and pointing device, commonly referred to as a mouse, trackball or touch pad. Other input devices may include a microphone, joystick, game pad, satellite dish, scanner, voice recognition device, keyboard, touch screen, toggle switch, pushbutton, or the like. These and other input devices are often connected to the processing unit through a user input interface that is coupled to the system bus, but may be connected by other interface and bus structures, such as a parallel port, game port or a universal serial bus (USB).

**[0057]** One or more monitors or display devices may also be connected to the system bus via an interface. In addition to display devices, computers may also include other peripheral output devices, which may be connected through an output peripheral interface. The computers implementing the invention may operate in a networked environment using logical connections to one or more remote computers, the remote computers typically including many or all of the elements described above.

**[0058]** Various networks may be implemented in accordance with embodiments of the invention, including a wired or wireless local area network (LAN) and a wide area network (WAN), wireless personal area network (PAN) and other types of networks. When used in a LAN networking environment, computers may be connected to the LAN through a network interface or adapter. When used in a WAN networking environment, computers typically include a modem or other communication mechanism. Modems may be internal or external, and may be connected to the system bus via the user-input interface, or other appropriate mechanism. Computers may be connected over the Internet, an Intranet, Extranet, Ethernet, or any other system that provides communications. Some suitable communications protocols may include TCP/IP, UDP, or OSI for example. For wireless communications, communications protocols may include Bluetooth, Zigbee, IrDa or other suitable protocol. Furthermore, components of the system may communicate through a combination of wired or wireless paths.

**[0059]** Although many other internal components of the computer are not shown, those of ordinary skill in the art will appreciate that such components and the interconnections are well known. Accordingly, additional details concerning the internal construction of the computer need not be disclosed in connection with the present invention.

**[0060]** More specifically, the system **400** may comprise at least one gaming server **402** coupled to one or more databases **404** and/or other data sources. The gaming server **402** may run a plurality of software modules to facilitate lottery-style games in accordance with embodiments of the present inven-

tion. The database(s) **404** may hold data records related to players and lottery drawings. One additional data source may be a bank or payment provider (**406**) that performs payment and/or credit services for the lottery game operator and players. Via a network **401**, the players may communicate, locally or remotely, with the gaming server **402** in order to enroll in the lottery game, participate in drawings, and manage player accounts. The players may employ a variety of computing devices **408** such as personal computers, mobile computers, personal digital assistants or handheld devices for communication with the gaming server **402**.

**[0061]** FIG. 5 is a block diagram illustrating exemplary software and data-storage modules for facilitating lottery-style games in accordance with one embodiment of the present invention. The exemplary modules may include a user interface module **502**, an enrollment module **504**, an accounting module **506**, a game execution module **508**, an administration/service module **510**, a player data module **512**, and a game data module **514**. These software modules may be programmed or configured to communicate with one another or with the data-storage modules.

**[0062]** The user interface module **502** may provide computer and/or Internet access for players and game operators/administrators to communicate with the other software modules. The enrollment module **504** may perform functions related to registering new players, such as verifying player information, assigning player IDs, and creating player records. The accounting module **506** may be responsible for managing player accounts and handling debit and credit transactions against the player accounts, including daily wagering and winner payouts. The game execution modules may perform functions such as scheduling and conducting lottery drawings, generating and publishing drawing results, and calculating proportional values and payout amounts. The administration/service module **510** may facilitate administrative and customer service tasks to be performed by an operator or personnel of the lottery game system.

**[0063]** The player data module **512** may contain and manage data records related to each player, such as player ID, personal information, wager preferences, account history, and so on. The game data module **514** may contain and manage data records related to the lottery drawings, such as drawing results, winner IDs, jackpot payouts, and roller amounts.

**[0064]** As variations of and/or improvement upon the above-described lottery-style games, other embodiments of the present invention may offer similar, membership-based games in connection with virtual and/or real maps. This type of lottery-style games may be referred to and are intended to be marketed or promoted as GeoSweep™ games. In a typical GeoSweep™ game, a grid pattern may be overlaid over a map dividing a land into grid units. A player may enroll in the game by taking virtual land ownership of one or more grid units and becoming committed to participate in a series of scheduled lottery drawings. The player may participate in a drawing by contributing tokens of value on behalf of at least one grid unit the player owns. During any of those drawings, if a grid unit owned by the player is selected as a (first-prize) winner, that player may receive a full or proportional prize amount. Additional winners in that drawing may be selected to win lesser amounts than the first-prize winner. Those additional winners are selected and their payout amounts are determined based on map positions of the additional winners with respect to the first-prize winner.

**[0065]** FIG. 6 shows a grid map for an exemplary GeoSweep game in accordance with one embodiment of the present invention. The game may be referred to as “GeoSweep Texas,” wherein a map of the State of Texas is overlaid with a grid **602**. Each grid unit **604** may be a rectangle or a square of the same or similar size. In general, a grid unit can take any other shape, such as triangle, hexagon (honeycomb) or other polygon. In some GeoSweep games, the grid units can have different shapes and/or sizes without substantially affecting the operation of the games. As a result, the grid **602** may divide up land of Texas into a plurality of small parcels with well defined boundaries. Each of the parcels (or grid units **604**) may be uniquely identified.

**[0066]** To participate in the GeoSweep Texas game, a player may be required to register to become a member. During registration, the player may pick one or more of available parcels to become a virtual owner thereof. There may or may not be an upfront cost for “owning” a parcel. Both sole and shared ownership may be possible for a parcel. In some instances, it might be beneficial to hold an auction among multiple interested players to determine which player gets a popular parcel. In addition, the player may make a commitment to participate in a plurality of scheduled lottery-style drawings involving the one or more parcels. The plurality of scheduled lottery-style drawings may take place periodically, such as once or more times a day, every other day or every few days, or a number of times per week or month. In each drawing, each participating parcel may be required to contribute a predetermined number of tokens to a prize pool or jackpot. The predetermined number may be a fixed one set by the game operator or administrator, or, alternatively, a variable one to be designated by each individual owner of the participating parcels. In any case, upon registration, each player may be required to fund his or her commitment to participate in drawings by depositing or pledging some amount of money.

**[0067]** At each drawing, one or more parcels or grid units **604** may be randomly selected as sole winner(s) or first-prize winner(s). For ease of explanation, it is assumed hereinafter that each drawing selects a single grid unit as a sole winner or a first-prize winner. In the case of a sole winner, an entire amount of jackpot or a calculated fraction thereof may be awarded to the owner of that winning grid unit. More typically, in addition to a first-prize winner, one or more winners of lesser amounts may be determined based on their relative map positions with respect to the first-prize winner. According to some embodiments, the drawing may be limited to parcels that are already owned or claimed by participating players, thereby ensuring at least one player will be entitled to a prize as described in more detail below. According to some embodiments of the present invention, the parcels or grid units may each have the same chance of being drawn as a first-prize winner. According to other embodiments, the parcels or grid units may have varying chances of being picked as a winner. For example, when a parcel costs more to own than others, it might enjoy a better chance of winning.

**[0068]** The prizes in each drawing may comprise tokens of value which have been contributed to that drawing by participating parcels. The prizes may also comprise rollover prizes from a previous drawing. In addition or as an alternative, the prizes may comprise other things of value. For example, a marketing partnership may be formed between the game operator and other business entities. In return for promotional or advertising activities on the GeoSweep game platform, the



business partners may contribute products and services to be awarded as prizes. If justified by the cost or return on investment, an actual piece of land or other real property may be awarded to a first-prize winner or a sole jackpot winner.

**[0069]** FIG. 7 illustrates an alternative method of establishing a grid or land boundaries in an exemplary GeoSweep game in accordance with one embodiment of the present invention. In this version of the GeoSweep Texas game, rather than overlaying a uniform grid over the Texas map, actual boundaries among the Texas counties may help define grid units of various sizes and shapes. Alternatively, actual land boundaries may define grid units for the GeoSweep game, such that the GeoSweep grid units correspond to actual land parcels. According to one embodiment, every grid unit (e.g., county or smaller parcels) may still cost exactly the same to “own” and/or have the same chance of being selected as a winner. According to another embodiment, the grid units or counties may cost differently and/or have varying chances of winning based on size and popularity of each county or parcel. In some embodiments, game parameters associated with a parcel on the GeoSweep map may be correlated to or associated with the conditions, market value, and popularity of the corresponding piece of land in the real world.

**[0070]** Since the grid units are irregularly shaped and in a non-uniform grid, different grid units may have different number of neighbors. For example, County A has eight neighboring counties, County B has five, and County C has only one. Depending on which grid unit is selected as a first-prize winner, there may be at least one but up to eight immediate neighbors who may be entitled to a second prize. One solution is to designate a fixed percentage of the jackpot that each second-prize winner is entitled to. For example, if each second-prize winner takes 2% of the jackpot, then 9 neighbors of the first-prize winner will share 18% of the jackpot while 2 neighbors (if there are only two) will only take 4% of the jackpot. Alternatively, a fixed percentage of the jackpot may be shared among the second-prize winners regardless of how many second-prize winners there may be. In that case, if a first-prize winner has only one neighbor, such as the case of County C, that single neighbor will be the sole second-prize winner taking the entire amount that has been allocated to second prizes. If the first-prize winner has eight neighbors, such as the case of County A, the eight neighbors will each take  $\frac{1}{8}$  of the entire amount that has been allocated to second prizes.

**[0071]** Many variations of prize-sharing schemes may be implemented for GeoSweep and/or proportional lottery-style games. In one embodiment, players that were introduced to the game by an existing player may share some of their winnings with that original (referring) player. In a further embodiment, groups of players may form prize-sharing clusters or syndicates.

**[0072]** Although a map of the State of Texas is used above as an example, it should be appreciated that maps of other types of geographic regions (e.g., township, city, county, country, ocean, island, and continent) may also be appropriate in GeoSweep games in accordance with embodiments of the present invention. For example, there may be GeoSweep USA, GeoSweep Europe, GeoSweep London, GeoSweep Hawaii, and so forth. In fact, a GeoSweep game may be established for a tourist destination and help promote tourism by offering prizes related to that destination or portions thereof. For example, a GeoSweep Alaska game may offer free roundtrip airline tickets as or in addition to a first prize.

The game may also offer free hotel accommodation in hotels that happen to be located within a winning grid unit. Since the GeoSweep games are map-based and/or location-specific, promotional opportunities and variations are almost endless, as will be appreciated by those of ordinary skill in the art of advertising and marketing.

**[0073]** FIG. 8 illustrates part of a New York City map to be used in an exemplary game which may be referred to as “GeoSweep Big Apple.” As shown, the actual streets and avenues in mid-town Manhattan may serve to define grid units for the GeoSweep game. Local residents, business entities, and/or tourists may be encouraged to participate in this game. Each potential group of players may be offered different incentives. A local resident may be interested in virtual ownership of a street block that he or she actually lives on, and participation in the GeoSweep game may also be a social networking opportunity with other community members. A local business might be interested in sponsoring promotions and placing its name on the GeoSweep map. In fact, the GeoSweep map may be an online, interactive map with promotional and informational features. A tourist may also be interested in the game for various reasons, such as to get familiar with the area and to win travel-related prizes offered by local businesses.

#### Geoball-GeoSweep Retail

**[0074]** Embodiments of the invention allow players to play GeoSweep as part of a traditional retail lottery game, similar to games such as Powerball, Pick 3, and others. Each potential unique set of lottery numbers may be mapped to a single unit (also referred to as a “Geo”) on a GeoSweep Gameboard, thereby converting traditional lottery numbers to actual locations and vice versa. Lottery numbers may be selected according to the rules of the traditional lottery game and a player who owns or has selected the particular Geo corresponding to the selected lottery number combination may be determined (e.g., by a lottery drawing) to be the winner. Accordingly, embodiments of this retail-based GeoSweep game, which may occasionally be referred to as “Geoball-GeoSweep Retail” (GGR), may be played at traditional retail locations and without the need for players to rely on the use of personal interactive devices such as computers or mobile phones with Internet connections, though in certain embodiments, players may also access many features of the game through interactive devices as well.

**[0075]** FIG. 9 depicts a method of playing a game of GGR in accordance with an embodiment of the present invention. At 904, consumers may begin to play the game by selecting lottery numbers or Geos. In one preferred embodiment, players may make their selection by visiting a retail location, by using a mobile app, or by using a personal computer. Other embodiments of the present invention may allow players to select through various other computing devices or means.

**[0076]** At a retail location, players may have access to a retail terminal where the players may select lottery numbers or Geos. Players may also fill out a conventional lottery betting slip by hand. Where the player is allowed to choose lottery numbers, a GeoSweep Gameboard may be made available so that the player can use it to identify the lottery number combinations to get the particular Geos that the player wants. For example, if the player wants the Geo corresponding to the White House at 1600 Pennsylvania, Northwest, Washington, D.C., the player could find the number combination that identifies the White House Geo and select it.

On the other hand, players might not know (either because the information is not made available ahead of time or because they decide not to make use of it) which number combinations correspond to which Geos. In that case, players may select a number combination (or have one generated for him/her), and then the player may learn after the fact what Geos the numbers identify (“Look, I got the White House!”). In at least one embodiment, players may select Geos instead of lottery numbers. In such cases, the players may then be provided with the lottery number combination corresponding to each of the selected Geo. Using the above example, a player may select the White House Geo and may be provided with the corresponding number combination.

**[0077]** In yet another embodiment, the retail terminal may be configured to translate a piece of player-supplied location information into the lottery number. For example, a player may walk up to a retailer and request a lottery ticket that maps to his/her own home address, and the retailer may enter the complete address into the terminal which then retrieves in real-time the corresponding lottery numbers. For another example, the player may request a quick draw from lottery numbers corresponding to a particular zip-code (5- or 9-digit) or even a particular street/town/city. For yet another example, the player may supply a set of coordinates for a location on the GRR Gameboard (e.g., longitude plus latitude), and the retail terminal may convert the coordinates into corresponding lottery numbers. In one embodiment, the GeoSweep mobile apps and website may also have such capabilities.

**[0078]** In addition to (or as an alternative to) retail locations, players may also play by accessing a website associated with an implementation of GGR. Similarly, players may play by downloading and accessing a GGR mobile application on his or her smart phone, tablet, television, or other devices. For example, players may download a GGR mobile app on his or her iOS, Android, or Windows Mobile smartphones by selecting the app for download from an app store or repository. The player may then select the downloaded and installed app to access the GGR game on his or her mobile device.

**[0079]** Upon accessing the GGR website or mobile app, the player may be asked to create an account or login to his previously activated account. In one embodiment, players may access the Gameboard even without first logging in or registering. Players may be shown the Gameboard that may be updated in real time and/or may correspond to the Gameboards that are shown at a retail location.

**[0080]** Similar to the Gameboard that may be available for players at a retail location, a player can select a particular Geo from anywhere on the Gameboard (something meaningful to them like their house, for example) and then request to be shown the associated unique lottery number associated with that Geo. Players may have the option to see their selected/reserved/purchased Geo(s) on the map.

**[0081]** In one embodiment, Geos occupied by other players are highlighted in red on the map. Clicking on one causes a popup to appear that displays the nickname of the occupier if known, the date it’s been occupied from and, if one exists, the “Why here?” tagline (descriptive text that the occupier of the Geo has entered). In contrast, the player’s own Geos may be displayed in green on the map. Players will be able to have a deed of tenancy symbol or animation presented to them when they associate a Geo with their account. The player may be able to see a zoomed out and zoomed in view of the Gameboard. In another embodiment, each Geo on the map may contain a symbol (Star, Moon, Sun, etc). There are a system-config-

urable amount of symbols, with each symbol distributed randomly but evenly amongst all of the Geos such that each symbol appears the same amount of times on the map. The symbols may be used as a mechanism for awarding low-tier prizes, as described in other portions of this disclosure.

**[0082]** A player may also have a quick and easy way of searching for a particular Geo. The player can search for the Geo by entering a Zip Code, landmark, address or street name, in the same way as on Google Maps or other mapping or navigation applications. They can also use the mobile App to find the Geo which is near their present physical location. The player may be informed if no results can be found, or if more than one result has been found. Links to all the possible locations are displayed, and clicking on one of them takes the user to that location on the map. It is also simple to navigate back to where the player was before they chose to look at the map.

**[0083]** Upon selection of a Geo, the selected Geo is added to the player’s list of chosen Geos. Players may continue to select additional Geos. In one embodiment, players may be given the option to purchase the Geos that the player has selected. Players may be directed to a payment gateway in the Lottery’s system, which will ask them to register a payment card and take them through the interactive payment process. In an embodiment, the player is simply provided with the lottery number associated with the selected Geos that the player then uses to complete a retail bet slip and have their entry processed through the retail terminal in the ordinary course.

**[0084]** In one embodiment, a player may select desired Geos using a smartphone or personal computer. A player may be provided with a code that the player may either print out or reproduce at a retail terminal. For example, the smartphone may produce a QR code, a bar code, or other coded symbols that could then be scanned directly by the retailer or at a retail terminal, without the need to translate the code onto a paper betting slip. In one embodiment, the player may visit a retail terminal with his or her smartphone and may select units by connecting his or her smart phone with the retail terminal, either through wired or wireless connections. Upon connection, the player’s selections may be automatically determined at the retail location and the player may be provided with his or her ticket, which may contain the Geos selected and/or the corresponding lottery numbers. The mechanism for producing the code, symbol, or lottery numbers on the smartphone could be either web-based (e.g., hosted on the webpage) or app-based (e.g., performed by a locally-installed software application).

**[0085]** Once the QR code has been scanned by the retailer and a ticket received, the purchase information may automatically be received and stored in the player’s mobile app. The registered player may also manually enter the transaction number on the ticket to associate Geos with their online accounts, including when the Geos were bought by Quick-Pick.

**[0086]** In an embodiment, the use of the smartphone and/or computer may allow a player to reserve Geos for a system-configurable amount of time, at which point, the player may then visit a retailer to purchase the reserved Geo. In embodiments in which each Geo may be owned by only one player, the presence of a reservation on a Geo prevents other players from selecting that same Geo. In one embodiment, a user

selecting a reserved Geo may be given a nearby vacant Geo, or nearby Geo fitting various requirements of a player (e.g., a point of interest).

**[0087]** Players may be provided with a checkout summary interface that provides important information about price per Geo, and price per block of days. Other information that may be provided includes Geo identification numbers, QR codes, and others. Players may have the option to save the QR code for retrieval once the player arrives at the retail location. In a preferred embodiment, player Geo purchases, reservations, QR codes, and other actions and information may be saved and associated with the player's account. As a result, players may view their list of Geos, QR codes, and other information at a later time, even with a different device from which the player initially perform the action (e.g., purchase Geo).

**[0088]** In any of the above-described GGR game embodiments, exclusive occupancy of any given Geo may or may not be enforced. According to some embodiment, two players who purchase entries to the GGR game at the same or different retail locations may happen to choose the same lottery combination, that is, the same set of lottery numbers. In that case, if the game authority does not impose exclusivity with respect to Geo occupancy, the two players may be allowed to occupy the same corresponding Geo. If that Geo happens to be winner of any prize, then the two players occupying it may share that prize. The same goes for three or more players who happen to occupy the same Geo. Alternatively, if the game authority does impose exclusivity with respect to Geo occupancy, then a predetermined set of rules may be followed to force the two players onto different Geos. For example, one rule may dictate that whoever submitted or purchased his/her entry earlier in time will get priority to occupy the Geo directly corresponding to or identified by the game entry. The game entry that is later in time may be associated with another or a nearby Geo (if the lottery drawing selects winner(s) based on Geos) or assigned to a different lottery combination. In another embodiment, the selection of one Geo by multiple players may cause the system to split that Geo into multiple new, non-overlapping Geos and enter those new Geos into the upcoming lottery drawing. Numerous other solutions exist to "distinguish" game entries pointing to the same Geo, if necessary.

**[0089]** The Gameboard that may be utilized in an implementation of a GGR game may vary. In one embodiment, a retail player can select 5 different numbers from the specified range of 1-59, and 1 number from a specific range of 1-39. In such games, the odds of matching all 6 balls are 1 in 195,249,054 (see, e.g., <http://www.durangobill.com/PowerballOdds.html> and [http://en.wikipedia.org/wiki/Lottery\\_mathematics](http://en.wikipedia.org/wiki/Lottery_mathematics) (both accessed on Aug. 12, 2011) for more detail). Therefore, by assigning each grid with a unique 6-part number from the available range, a GeoSweep Gameboard based on the map of the United States (or any other real or virtual map of the United States and/or any other country or countries or territories in the world) with 195,249,054 grid squares, can exactly map the entire potential outcome space for such a number-based lottery drawing. Thus, a GeoSweep player can select or be assigned Geos by getting numbers from a lottery number generator that correspond to specific Geos. FIG. 10 illustrates an exemplary Gameboard of the state of Texas utilizing the 6-part lottery number described. As seen in the cutout portion **1004** of a small region in Texas, Geos are each associated with a unique 6-party lottery number combination. Geo **1008**, for example may be associated with lottery num-

bers 33:35:37:39:12:5 whereas the bordering Geo **1012** may be associated with lottery numbers 34:12:14:16:18:2.

**[0090]** In another embodiment, players may be able to select 5 balls from a set of 56 numbered balls and 1 bonus ball from a set of 46 numbered balls. As is the case in a Mega Millions game, the odds of matching all 6 balls are 1 in 175,711,536. The corresponding GeoSweep Gameboard may have about 175,711,536 units. It may be appreciated that other traditional retail lottery games involving fewer or more numbered balls, such as Daily 3 or Daily 4, can also be adapted to map with a GeoSweep Gameboard. Rather than picking distinct numbers from a specified range (e.g., five of the six Powerball numbers must be from the 1-59 range), a player may be required to pick from a fixed range (e.g., 0 through 9 or 1 through 50) for each of his/her lottery numbers. For example, in a 6-number game, the player may pick from the 0-9 range, each of the six numbers independently; in a 4-number game, the player may pick from the 1-50 range, each of the four numbers independently. The corresponding GeoSweep Gameboard should then have approximately or exactly  $10^6$  (1 million) units and  $50^4$  (6.25 million) units respectively.

**[0091]** In one embodiment, the allocation of each unique possible ball draw corresponds randomly to a unique grid square. In another embodiment, a canonical ordering of all possible ball draws is algorithmically mapped to a canonical ordering of the grid squares.

**[0092]** A person of ordinary skill will readily appreciate that the invention contemplates that the numbers chosen by the player and any restrictions on the range will be a function of both the retail game device (6 balls, 5 balls, 4 balls, etc.) and the number of Geos to be mapped to numbers given to players. If there is a greater number of Geos to be mapped, then, for example, the range of numbers can be increased as appropriate.

**[0093]** According to some embodiments, the lottery numbers picked at the retail terminal may have a more direct association with the GeoSweep Gameboard. For example, a unit (or Geo) on the United States map may be uniquely identified with a 4-part number: the first number (1-50) indicates a state, the second number (1 through c, actual c dependent on the state) indicates a town/city/county, the third number (1 through s, actual s dependent on the state and town/city/county) indicates a street, and the fourth number indicates a house/building street number of an actual or virtual address. Numerous other ways of associating a set of lottery numbers with a Geo exist, as may be appreciated by one of ordinary skill in the art.

**[0094]** It should be noted that the total number of Geos on the GeoSweep Gameboard (this number being denoted G) need not be exactly the same as the total number of possible combinations of the numbered balls (this number being denoted B). In fact, it will typically be the case that there is not an exact numerical match. For instance, in the 6-number Powerball example, according to one embodiment,  $G=B=195,249,054$ . However, if there happens to be 200,000,000 Geos on the Gameboard ( $G>B$ ), then those additional Geos could be marked as not corresponding to the 6-number Powerball codes so that players can be alerted. Alternatively or additionally, those additional Geos could be bonus Geos randomly linked with one or more of the 195,249,054 coded Geos and be used to determine multiplier factors. For example, if a retail player picked a 6-number combination that has a hidden association with X of the additional (un-

coded) Geos, any winning of that player may get multiplied by X. Conversely, if  $G < B$ , some of the 6-number combinations will have no corresponding Geos on the gameboard. However, those un-mapped lottery numbers could be pre-designated (secretly) as bonus (free) numbers or even instant-win numbers. In any case, those skilled in the art would appreciate there is no need to require an exact one-to-one match between the Geos and the lottery number combinations.

**[0095]** Other variations are within the spirit and scope of the present invention. Most conventional number pickers in retail establishments allow the player to either pick his/her numbers or allow the player to have his/her numbers randomly generated. For example, in the state of Virginia's "Cash 5" lottery (see <http://www.valottery.com/cash5/how-to-play.asp>, accessed on Aug. 12, 2011), the player can choose five numbers between 1 and 34 or the computer can generate those four numbers. The odds of any five number combinations matching the winning selection are 1 in 278,256 (B). If this Cash 5 option is used to select Geos, then up to 278,256 Geos could be mapped.

**[0096]** If  $B > G$ , then unmapped lottery numbers could be handled in any of the manners described above for the 6-number Powerball example. Alternatively, the unmapped numbers could be associated with nearest-distance Geo's. For example, using any suitable nearest numerical distance algorithm well known in the art, a number combination that does not exactly correspond to a Geo could be associated to the nearest existing Geo. In some embodiments of Geosweep, a Geo can be owned by only one person/entity/syndicate. In that case, as Geos are selected, they are taken off the GeoSweep gameboard and the nearest distance measurement will be based on remaining Geos. A person of ordinary skill in the art will appreciate that the nearest Geo algorithm for unmapped Geos could be none other than a pure numerical distance measurement and still be within the spirit and scope of the present invention. For example, the "nearest" Geo might simply be the one that is closest in moving along a vertical or horizontal line (longitude or latitude) on the grid map.

**[0097]** According to one aspect of a nearest-Geo embodiment, the player could be given the option to cancel the selection if the Geo is unsatisfactory ("Oh, I got Waco, Texas. I want a different location so please let me submit a different number pick").

**[0098]** Once the numbers are chosen at the retail location, either through selection at the retail location or through a mobile app or personal computer, the player selection may be entered and a lottery slip or receipt may be provided at **908** of FIG. 9, which may include an indication of the Geo units corresponding to the numbers. For example, the lottery slip might state the name of the country and the location for the Geo units. Or the lottery slip might include a picture or diagram of the country and location of the Geo units. The printed ticket may further display, textually or graphically, identifying information of the corresponding geographical location (e.g., address, coordinates, map snippet) as well as information relating to that location (e.g., ads for nearby merchants). In other words, since the lottery ticket carries meaningful location information, it could be a medium for conveying location-based advertisements, news, and other information.

**[0099]** After a user has selected Geos and purchased a ticket, players may access additional features of the game. In

one embodiment, tickets printed by the retail lottery terminal may also contain a QR code (or codes) or an alphanumeric code (or codes) that the player could use to find his/her Geo(s) on the map on the website using a smartphone, tablet, PC or similar device. In addition to showing the location of the Geo on the map, this code may uniquely identify the ticket and thus allow the player to see details of his/her bet online. Moreover, by registering on the website, the player may be able to enter his/her Geo(s) into additional online-only/2<sup>nd</sup>-chance draws. The website may be further configured to display to a player whether any other player happens to have chosen his/her Geo(s).

**[0100]** Thus, whereas in a conventional lottery this is where all interaction and gameplay stops, the GGR game adds a totally new dimension by allowing a player to enhance his/her playing experience both before and after buying a ticket.

**[0101]** At **912**, a drawing may be completed to determine a winner. In one preferred embodiment, a conventional lottery ball based draw machine is utilized to select the winning lottery numbers. For example, 6 balls may be randomly selected by the balls-based draw machine. The 6 selected balls as drawn may be analyzed to determine the winning Geo. In at least one other embodiment, a winning unit is selected from the Gameboard and may be selected amongst those units that are in play (e.g., have been entered for play by a player).

**[0102]** As in a conventional lottery drawing there may be prize tiering based on how many of the selected numbers are correctly matched with those chosen on a ticket. In one example where the Gameboard is of a map of the USA containing 195,249,054 squares and five balls and drawn from 59 available balls and 1 bonus ball is drawn from 39 available balls, the prize matrix depicted in FIG. 11 may be utilized.

**[0103]** In this example, each draw results in a set of 6 numbers that correspond to a unique grid square on the Gameboard. If any player has chosen those exact 6 numbers then they will win the Jackpot, allowing the player to win \$250,000.00. If more than one player has chosen them, then they may equally share the Jackpot.

**[0104]** Furthermore, each of the lower prize tiers may correspond to a multiple winning grid square on the GGR Gameboard. In the example above, there are 38 squares that share the correct standard 5 numbers but do not contain the correct bonus ball number. And there are 3,162,510 squares that share the correct bonus ball number but none of the standard ball numbers.

**[0105]** In one embodiment of the present invention, a GGR system will update a scale digital heat-map display (DHMD) of the (USA) Gameboard in real-time as the numbers are drawn. Players, for example, may access the DHMD through their app, the website, at retail locations, or even on their televisions. After the first 3 standard balls have been drawn the DHMD may flash the locations of the 543,780 squares that have just won (in the example above) at least \$7. With each subsequent ball drawn, the DHMD may highlight the decreasing subset of those original winning locations that now match more numbers and are eligible for higher prizes. In this example the Bonus Ball is drawn last and the DHMD flashes the locations of all of the squares that correctly match this number, before finally zooming in on the single square that correctly matches all 5 standard balls and the bonus ball.

**[0106]** According to one embodiment of the present invention, where the winning grid is not owned by or purchased by any player, a player or players whose Geos are located closest

to the exact-match unit could be declared winner of the jackpot. In this variation of the GGR game, each draw will result in at least one jackpot winner. A further variation could be to reduce the jackpot prize in proportion to that “closest distance” from the unit having an exact match. For instance, if the closest occupied Geo is 10 Geos away from that exact-match unit, then the jackpot winner will take home a prize that is 10% less than if he had an exact match. Numerous other algorithms for discounting the jackpot prize are also possible. Similarly, runner-ups and their respective prizes could be determined based on their proximity to either the exact-match unit or the actual winning Geo. Where there is no guarantee of a jackpot winner, the jackpot could be rolled over to the next draw; where there is a guaranteed jackpot winner, the potential players may have more incentive to participate in a draw and there may still be leftover wages to roll over to the next draw.

**[0107]** In one embodiment, players may be provided with a bonus draw based on states. Because each lottery combination corresponds to a place on the map, it therefore, may also correspond to (in the case of the U.S.) a state: the state in which that place is located. For instance, after the winning balls are drawn, the location and state of those numbers can be shown to those watching the draw (either live, or via TV or internet broadcast). Then, an additional “state ball” may be drawn from a set of balls each representing one of the states of the map. (So in a US instance of the game, there would be 50 such balls (51 if D.C. is included)). If the “state ball” matches the state of the jackpot winning location, a multiplier could be applied either to the jackpot prize or to all prizes won by tickets with the same state printed on them (which is to say by tickets whose corresponding Geo is in that state).

**[0108]** If the multiplier is sufficiently larger then one attraction of this multiplier is that it gives players an extra element of excitement and anticipation waiting to see whether the advertised jackpot is going to be, say, multiplied by ten by the state ball draw.

**[0109]** This state can be printed on the ticket. The state can also be selected instead of numbers on the betting slip when the player simply wants a random Geo in that state. In this instance the GGR system will select a random Geo in the specified state and cause the retail terminal to print the six numbers corresponding to that Geo (along with the state the user selected) on the ticket.

**[0110]** To adjust odds, different geographical areas or locations could be used in an analogous way to states. For instance a time zone, an electoral district or a nearest city could all be derived from the location of the Geo corresponding to the player’s ticket. Other types of regions may be used instead of states, such as cities, counties, countries (in the case of Europe), boroughs, school districts, and others. Indeed, various other types of classifications may be utilized instead of physical locations, such as attributes of the units, (e.g., the type of buildings contained of each unit [e.g., hospital, park, school, house] or elevation). Any of these could be printed on the ticket instead of, or as well as, the state and used in a bonus draw.

**[0111]** At 916, the winning player(s) may be determined and the prize may be provided to the winning player(s). For example, players may redeem prizes at retail locations by presenting the retailer or retail terminal with his or her winning ticket. In one embodiment, players may provide the ticket to the retailer or a QR code generated from the mobile app or website that demonstrates that the player owns the

winning Geo. Prizes may be provided to the player at the retail location or the player may be given the prize through other means in accordance with local lottery rules. Players are also able to check if they have a winning GeoSweep ticket by accessing the mobile app, mobile-optimized website or desktop/tablet optimized website and entering the transaction number from the paper ticket. In addition to cash prizes, players may win tokens that the player may use to play additional games of GGR or may play other GeoSweep games (e.g., GeoSweep above, TreasureHunt).

**[0112]** In one embodiment, the unique identifier code (UIC) shown on the ticket printed by the retail lottery terminal may also be entered into a raffle draw. In this draw, a winning UIC would be drawn from amongst all those entered in the draw. The winner might share the same grid square as many other people without sharing his/her raffle prize (because each of the other players has a different UIC on his/her ticket, despite having selected the same set of six numbers to play).

**[0113]** Embodiments of the present invention further allow players of GGR to receive the benefits of numerous interactive features. In addition to the location-based play described above, embodiments further allow location-aware play. In particular, the location of the player, which may be determined through the GPS features of a smartphone, a personal computer, tablet, or other devices, can allow a player to find out the particular lottery number corresponding to the device’s (and the player’s) current physical location at the time.

**[0114]** In one embodiment, group play is available. Players are allowed to join online syndicates to pool tickets and share prizes. For example, co-workers may create a group through a user interface on the GGR website for all of the coworkers to join. The group as a whole may select units that they may choose to play. In one embodiment, participating players may vote to select units for each draw period.

**[0115]** As another feature, players may add tag lines or information to the Geo that the player has purchased or is playing with, thereby allowing a player to personalize his or her Geo. A tagline may be a short sentence about why they picked that landmark/Geo or could be a comment personal to them, e.g., “Our first date”, “‘boys’ night out” etc. These taglines are visible to all players who view the Geo on the map. The App will encourage players to “tag” their geos. In one embodiment, players may access the GGR game (i.e., select units, view the Gameboard) through a social network. A player may view the Gameboard and may view his or her friend’s units (including their personalization).

**[0116]** In embodiments of the present invention, a player may also configure his or her GeoSweep account so that he or she may receive notifications in response to various events associated with his or her account, including, but not limited to, winning a prize, an upcoming draw, purchases, reservations, upcoming expirations, and others. Notifications may be in the form of emails, text messages, push notifications, app-based messages, voice generated messages, and others. For example, each registered player may receive a notification each day, soon after the draw occurs. The draw notification may contain a link, where the player can check to see how near they were to that day’s winning Geo(s).

**[0117]** In an embodiment, players may also utilize the player’s mobile app to find the nearest retail terminal based on the player’s current location or based on entered address, zip code, or other information. The mobile app may further provide the player with directions to the determined location.

[0118] In addition to selecting units, players may select units for more than one drawing in accordance with several embodiments of the present invention. That is, players may reserve a Geo for two or more drawings, which may be consecutive or nonconsecutive periods. For example, players may reserve the white house Geo from July 3 through July 6. The length in which players may own a Geo may differ depending on the method in which the player is purchasing the Geo (e.g., retail or online). In yet another embodiment, Players can renew their purchased Geos for an additional draw period(s) by taking their paper ticket into the retail outlets—so that once they own them they never have to run the risk of losing those Geos. It may be possible to do this a configurable number of days in advance of expiration. However, in certain embodiments, if the Geos are not re-purchased before the retail purchase expiration time, the Geos will be available for purchase by any user. If the geos are renewed in advance, the player may be given a new ticket for the next play period and may retain their existing ticket to cover the remaining period to the end of the initial play period.

[0119] It should be appreciated by those skilled in the art that, although the foregoing description frequently refers to a lottery game involving a 6-part number, embodiments of the present invention are not limited to drawings of six numbered balls. While the foregoing description includes many details and specificities, it is to be understood that these have been included for purposes of explanation only, and are not to be interpreted as limitations of the present invention. It will be apparent to those skilled in the art that other modifications to the embodiments described above can be made without departing from the spirit and scope of the invention, including integrating the features of Geosweep with GGR and vice versa. Accordingly, such modifications are considered within the scope of the invention as intended to be encompassed by the patent claims ultimately issued from this application.

[0120] While the foregoing description includes many details and specificities, it is to be understood that these have been included for purposes of explanation only, and are not to be interpreted as limitations of the present invention. It will be apparent to those skilled in the art that other modifications to the embodiments described above can be made without departing from the spirit and scope of the invention. Accordingly, such modifications are considered within the scope of the invention as intended to be encompassed by the following claims and their legal equivalents.

1. A computer-implemented method for lottery-style games, the method comprising:
  - establishing, by at least one processor, a map-based lottery game that is scheduled to have a lottery drawing, said map-based lottery game including a gameboard comprising a plurality of units each selectable to represent an entry in the lottery game;
  - receiving a plurality of game entries each identifying a unit on the gameboard either with an identifier of the unit or with a lottery combination corresponding to the unit; and
  - selecting at least one winning entry from the plurality of game entries by selecting among the plurality of units on the gameboard or among the units identified by the plurality of game entries.
2. The method according to claim 1, wherein said lottery combination comprises a plurality of lottery numbers.
3. The method according to claim 2, wherein said plurality of lottery numbers comprise a first lottery number, a second

lottery number and a third lottery number, said first lottery number corresponding to a region, said second lottery number corresponding to a city or town, and said third lottery number corresponding to a street, wherein each of the region, city or town, and street is represented by one or more unit on the gameboard.

4. The method according to claim 1, wherein at least one game entry is received from a retail terminal, a mobile application, or a web-accessible computing device.
5. The method according to claim 4, further comprising the steps of:
  - receiving a reservation entry;
  - generating a reservation code for display to a player for input at a retail terminal;
  - receiving said reservation code from a retail terminal; and
  - storing at least one game entry based on said received reservation code.
6. The method according to claim 5, wherein said reservation code is received at a retail terminal through scanning of said reservation code.
7. The method according to claim 6, wherein said at least one game entry stored identifies a unit on the gameboard near a unit identified by the reservation entry or near a unit corresponding to a lottery combination identified by the reservation entry.
8. The method according to claim 1, further comprising the step of storing the plurality of game entries at a storage device connected to the at least one processor.
9. The method according to claim 8, wherein the storing of a game entry of said plurality of game entries is based on the purchase of said game entry.
10. The method according to claim 9, wherein said purchase is received from a mobile application, a web-accessible computing device, or a retail terminal.
11. The method according to claim 1, further comprising the step of selecting a second winning entry, wherein said second winning entry identifies a second unit on the gameboard near the unit corresponding to the at least one winning entry.
12. The method according to claim 1, further comprising the step of making at least a portion of the gameboard available for display on a networked device, thereby to receive at least one game entry from said networked device.
13. A system for lottery-style games, the system comprising:
  - a processor;
  - at least one storage device coupled to the processor;
  - a user interface coupled to the processor via one or more networks;
 wherein the processor is adapted to communicate with the at least one storage device and the user interface to execute instructions to:
  - establish a map-based lottery game that is scheduled to have a lottery drawing, said map-based lottery game including a gameboard comprising a plurality of units each selectable to represent an entry in the lottery game;
  - receive a plurality of game entries each identifying a unit on the gameboard either with an identifier of the unit or with a lottery combination corresponding to the unit; and

select at least one winning entry from the plurality of game entries by selecting among the plurality of units on the gameboard or among the units identified by the plurality of game entries.

14. The system according to claim 13, wherein said lottery combination comprises a plurality of lottery numbers.

15. The system according to claim 14, wherein said plurality of lottery numbers comprise a first lottery number, a second lottery number and a third lottery number, said first lottery number corresponding to a region, said second lottery number corresponding to a city or town, and said third lottery number corresponding to a street, wherein each of the region, city or town, and street is represented by one or more unit on the gameboard.

16. The system according to claim 13, wherein at least one game entry is received from a retail terminal, a mobile application, or a web-accessible computing device.

17. The system according to claim 16, the processor is further adapted to complete the following tasks:

- receiving a reservation entry;
- generating a reservation code for display to a player for input at a retail terminal;
- receiving said reservation code from a retail terminal; and
- storing at least one game entry based on said received reservation code.

18. The system according to claim 17, wherein said reservation code is received at a retail terminal through scanning of said reservation code.

19. The system according to claim 18, wherein said at least one game entry stored identifies a unit on the gameboard near a unit identified by the reservation entry or near a unit corresponding to a lottery combination identified by the reservation entry.

20. The system according to claim 13, wherein the processor is further adapted to store the plurality of game entries at the at least one storage device.

21. The system according to claim 20, wherein the storing of a game entry of said plurality of game entries is based on the purchase of said game entry.

22. The system according to claim 21, wherein said purchase is received from a mobile application, a web-accessible computing device, or a retail terminal.

23. The system according to claim 13, wherein processor is further adapted to select a second winning entry, said second winning entry identifies a second unit on the gameboard near the unit corresponding to the at least one winning entry.

24. The system according to claim 13, wherein processor is further adapted to make at least a portion of the gameboard available for display on a networked device, thereby to receive at least one game entry from said networked device.

\* \* \* \* \*