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(19) **United States**(12) **Patent Application Publication****Mabry et al.**(10) **Pub. No.: US 2005/0266935 A1**(43) **Pub. Date:****Dec. 1, 2005**(54) **GAME SYSTEM AND METHOD**

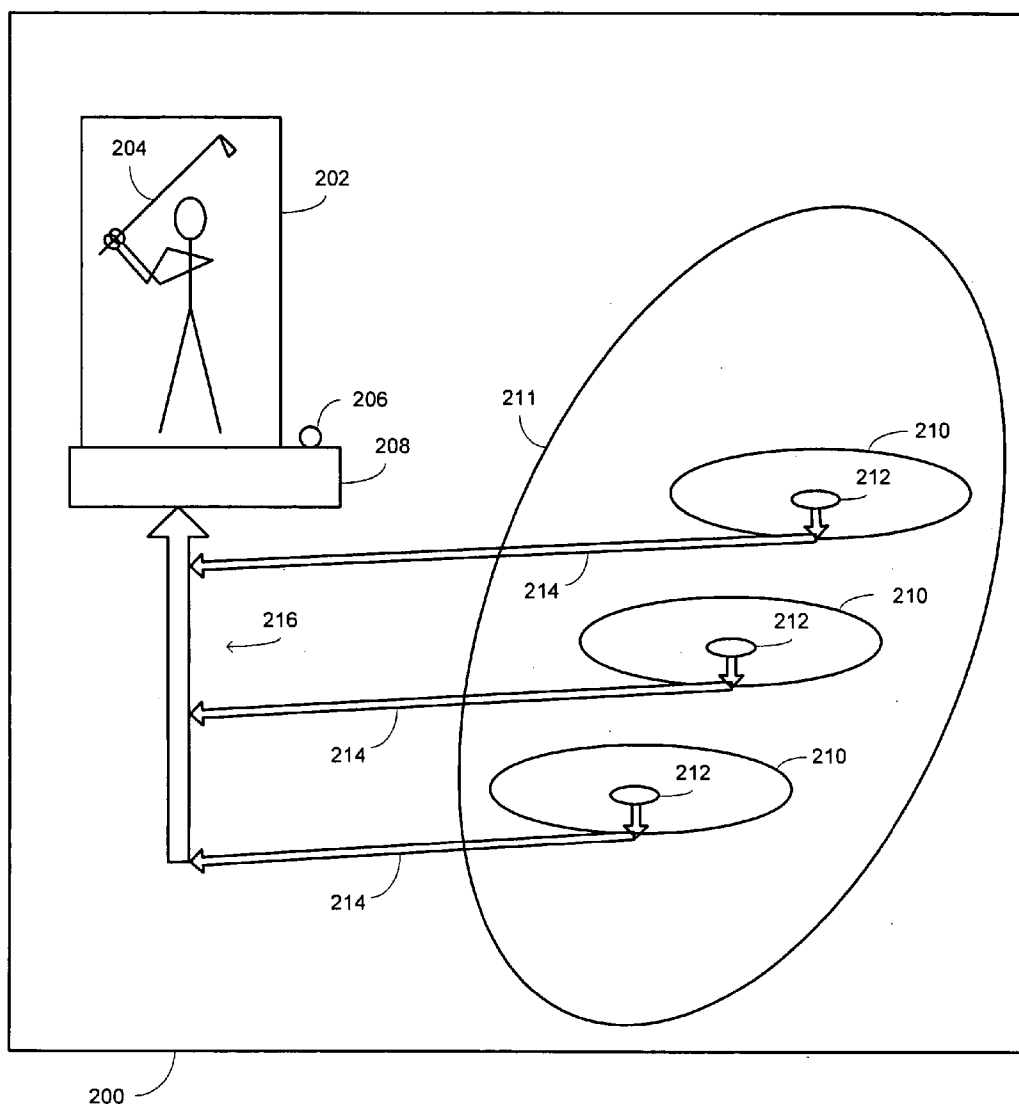
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ABSTRACT(76) Inventors: **Frank Mabry**, Irvine, CA (US); **Neal Mabry**, Irvine, CA (US)

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FISH & RICHARDSON, PC**12390 EL CAMINO REAL****SAN DIEGO, CA 92130-2081 (US)**(21) Appl. No.: **10/858,755**(22) Filed: **Jun. 1, 2004****Publication Classification**(51) **Int. Cl.⁷** **A63B 57/00**(52) **U.S. Cl.** **473/409**

A game system and method of playing a game is disclosed. A game system includes a plurality of bases and a plurality of targets. Each base is configured to host a player sending a projectile. Each target is configured to receive and identify the projectile. The game system further includes a computer system having at least one local station at each of the bases, and which is connected to a central computer. Each local station is configured to receive player information and wherein the central computer is configured to process scoring information based on the player information. The game system further includes a projectile identifying mechanism coupled to each target, each base, and to the computer system, and configured to associate each projectile with a player and track a game performance of the projectile for input as the scoring information.



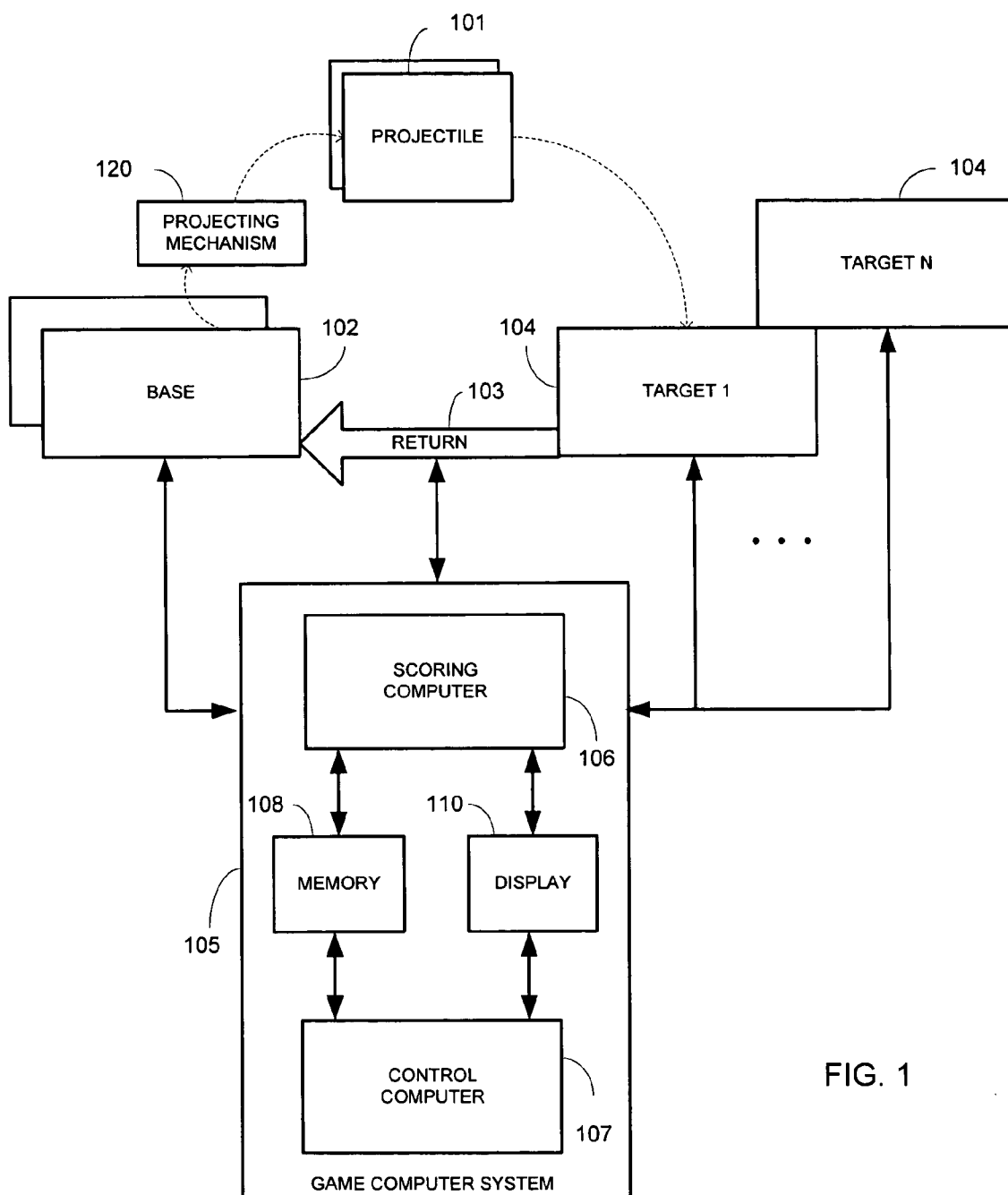


FIG. 1

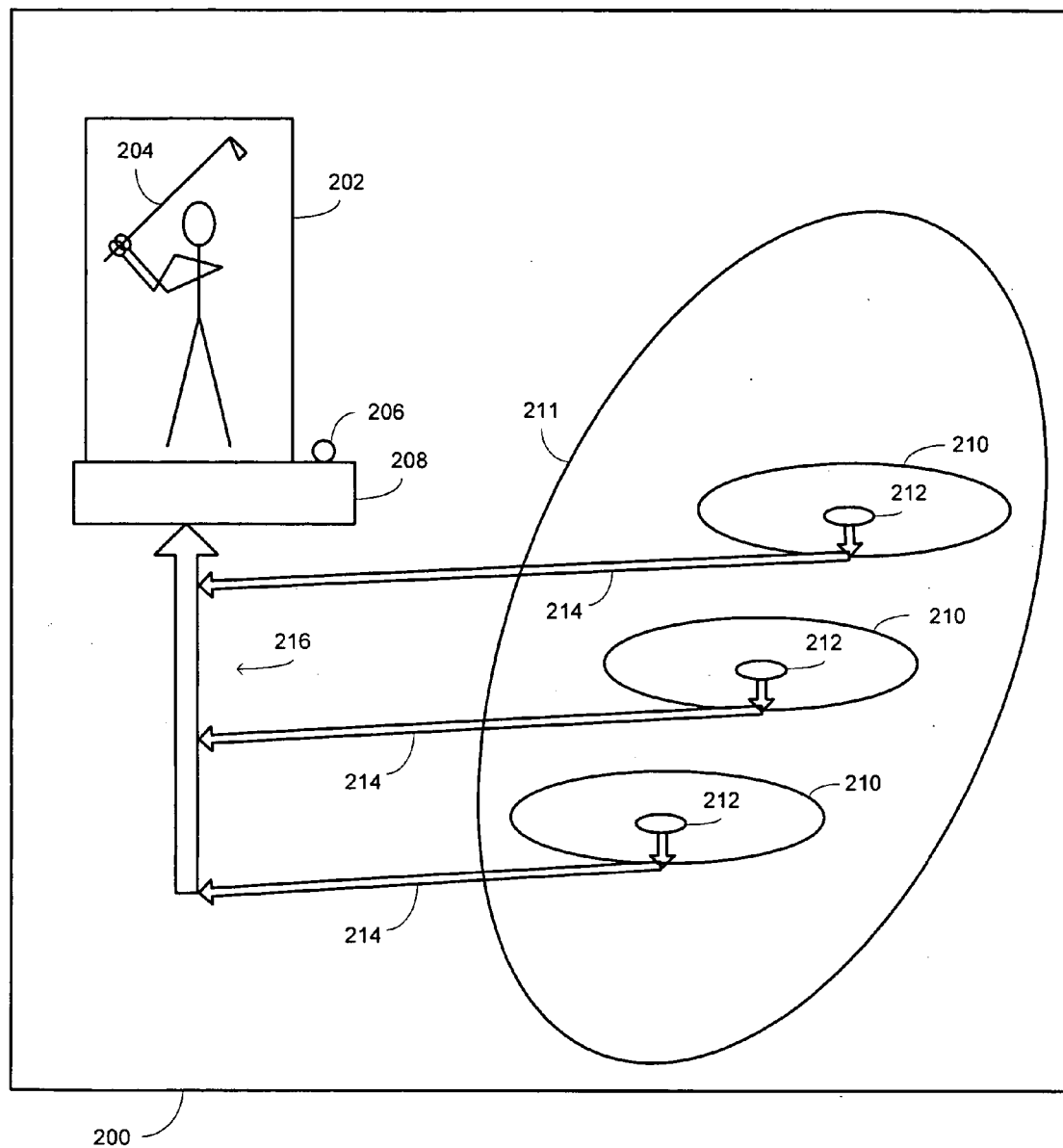


FIG. 2

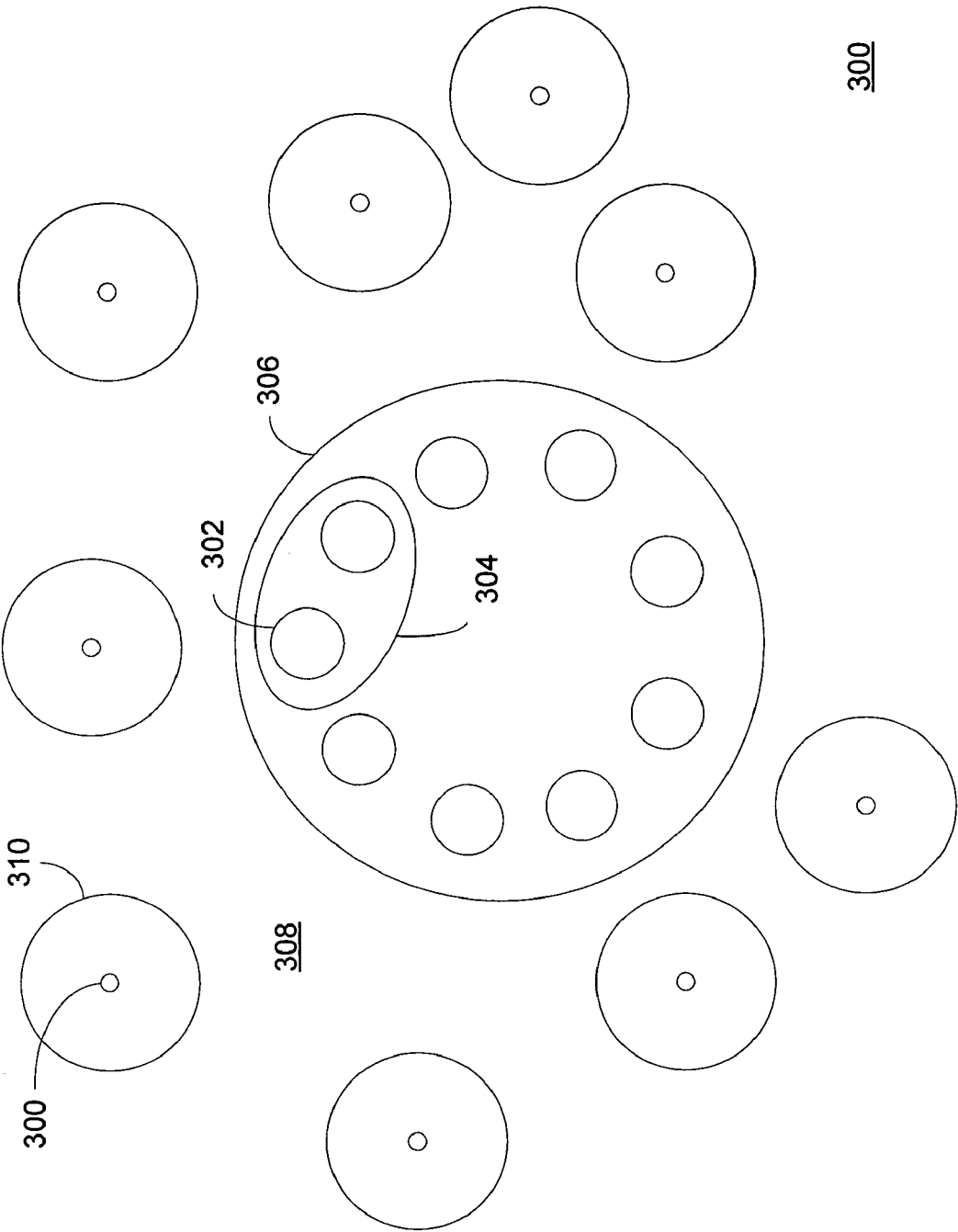


FIG. 3

400

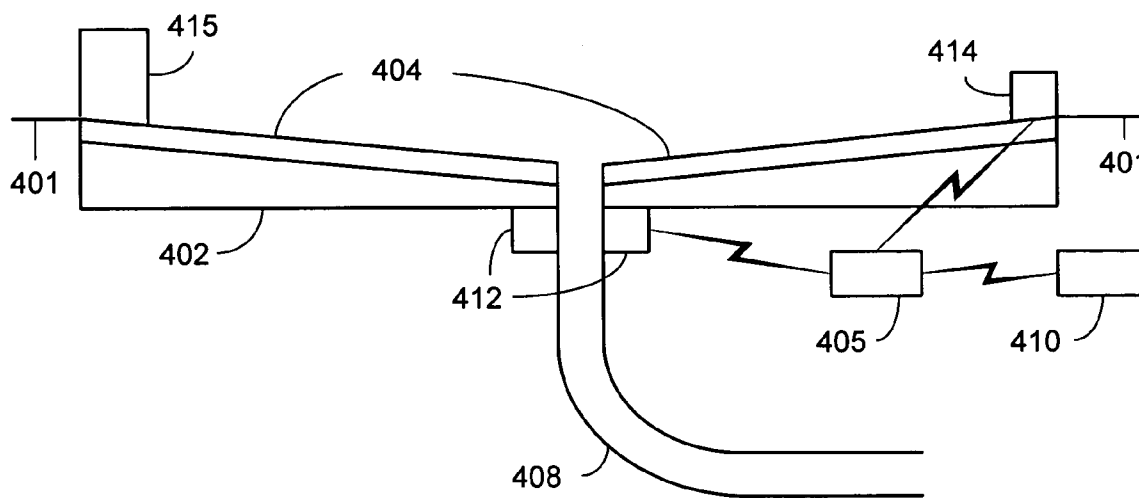


FIG. 4

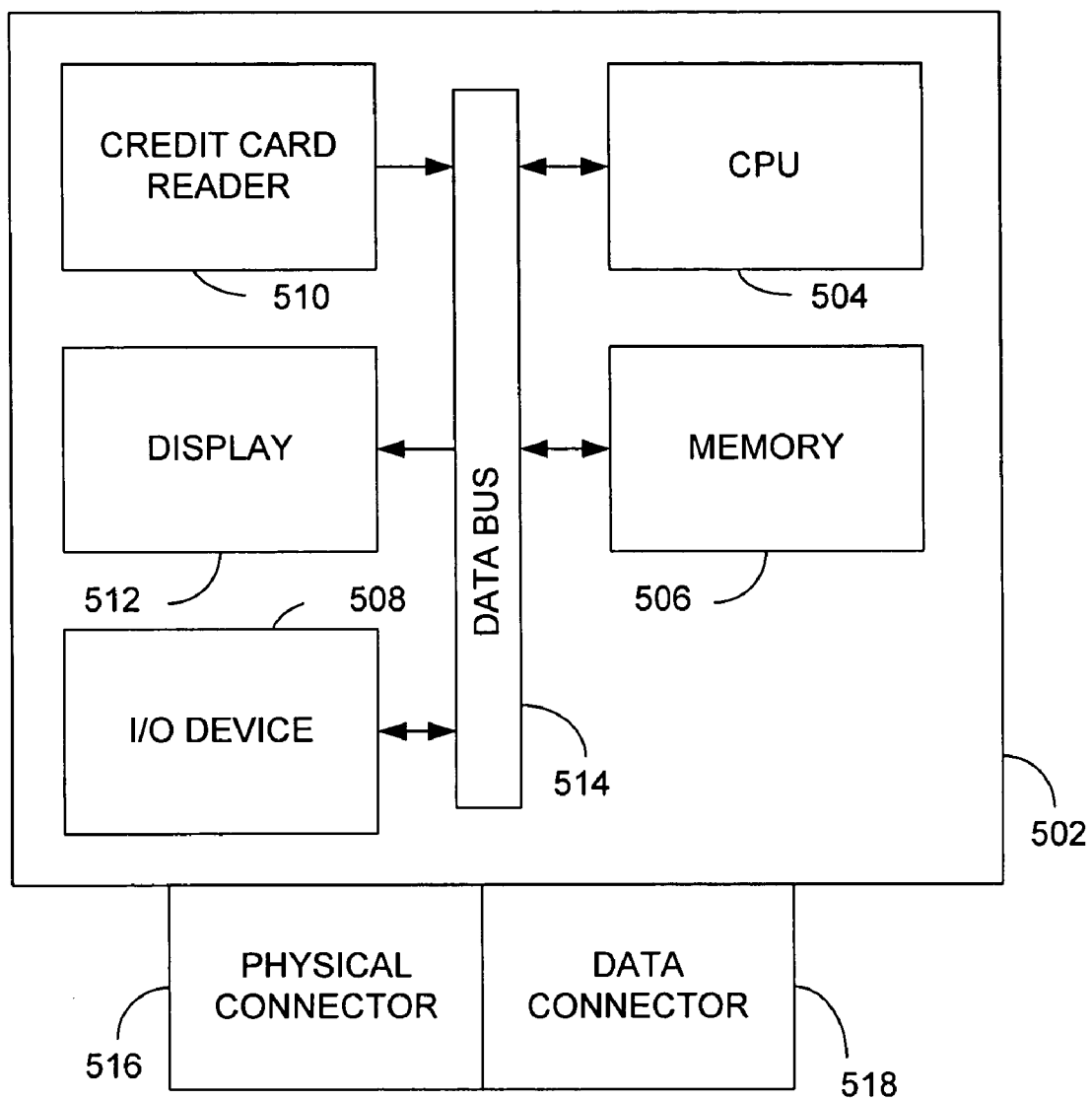


FIG. 5

500

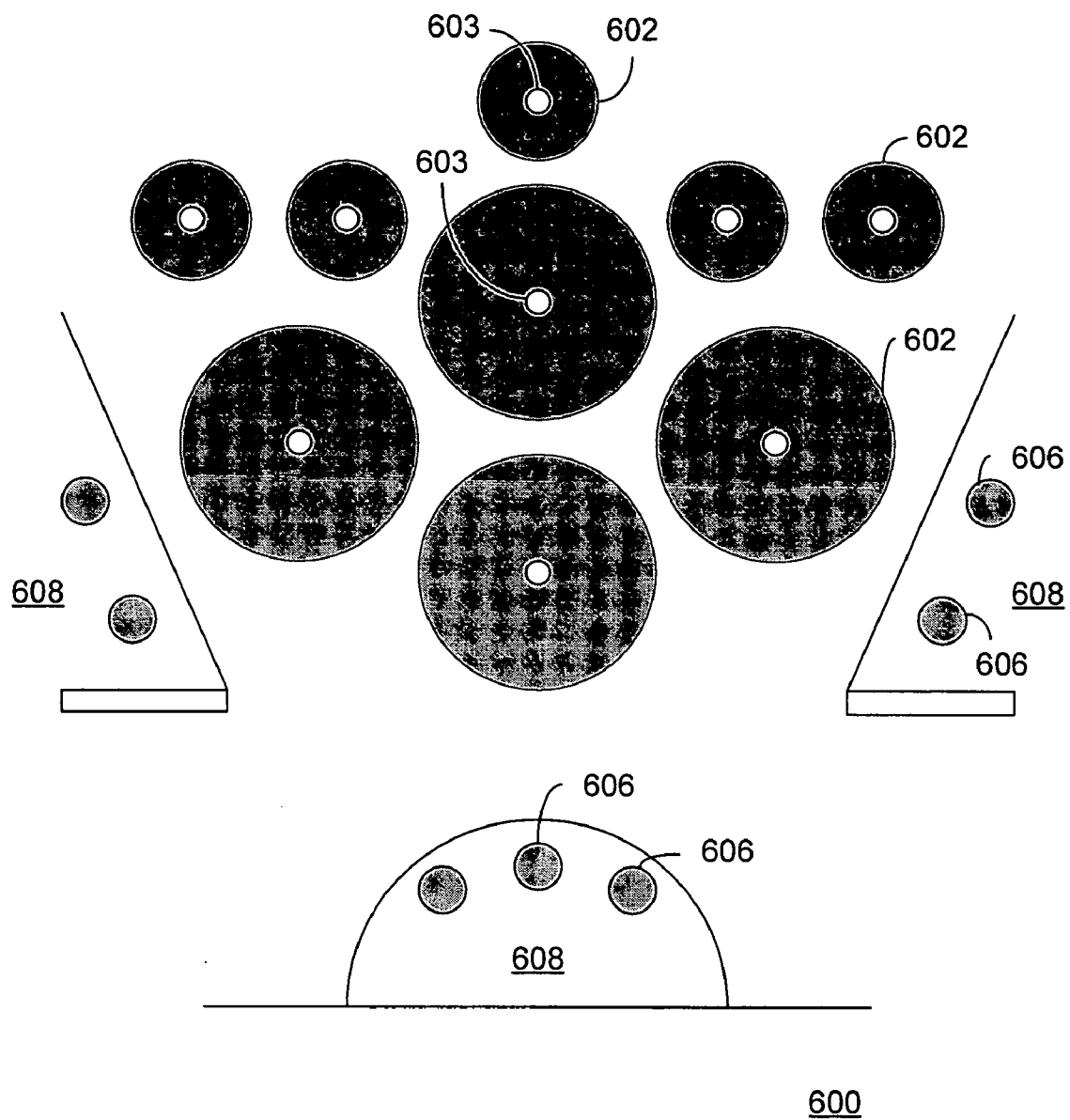


FIG. 6

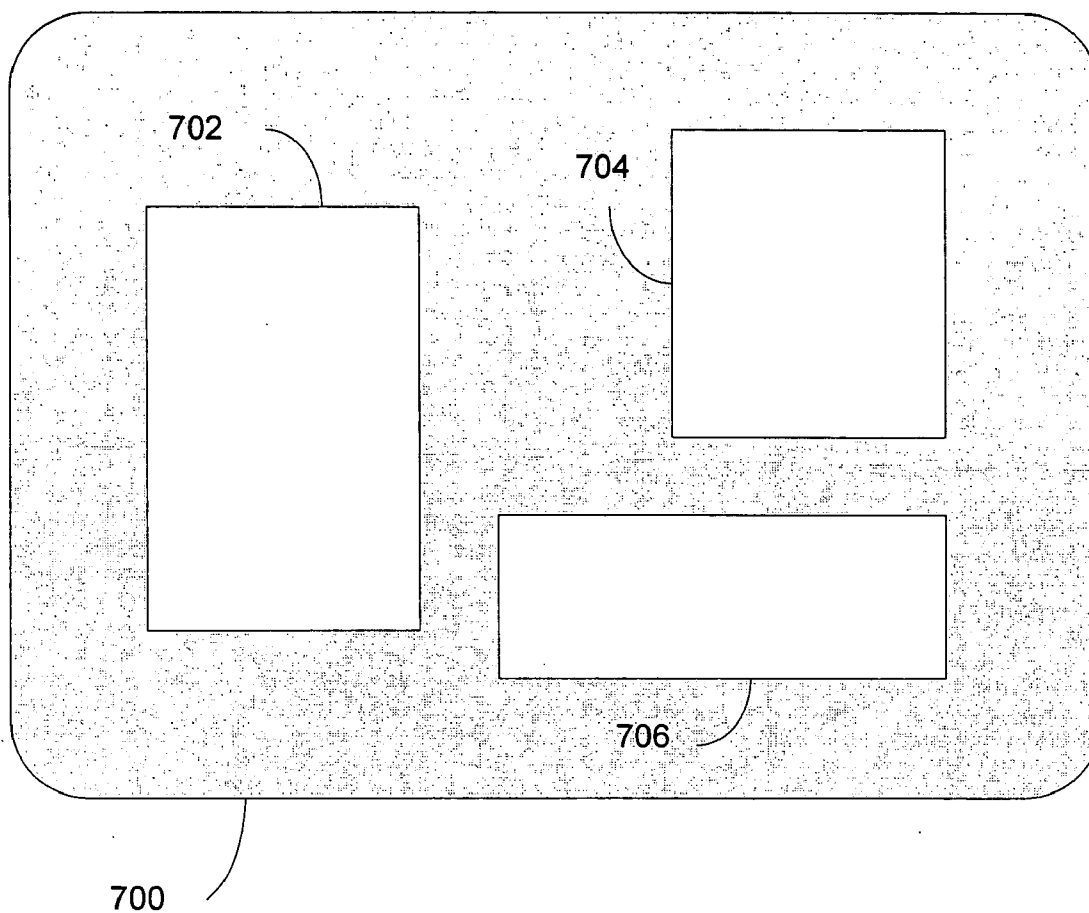


FIG. 7

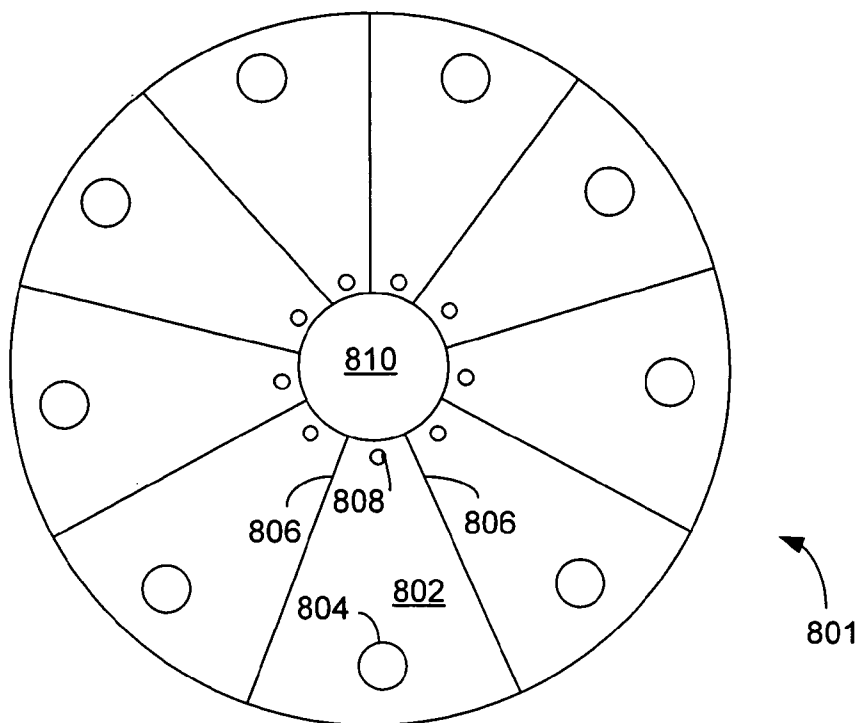


FIG. 8A

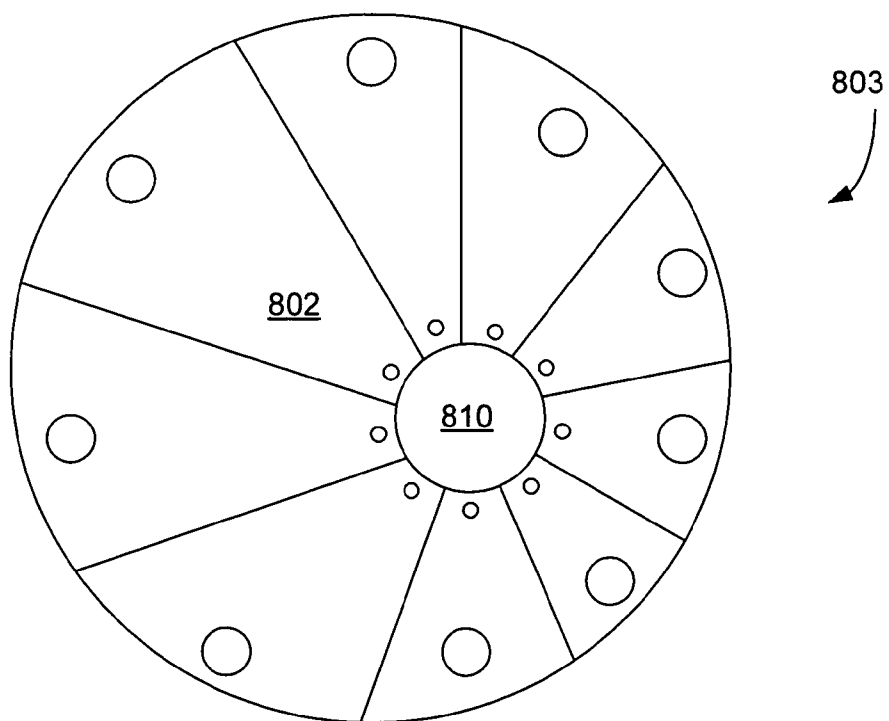


FIG. 8B

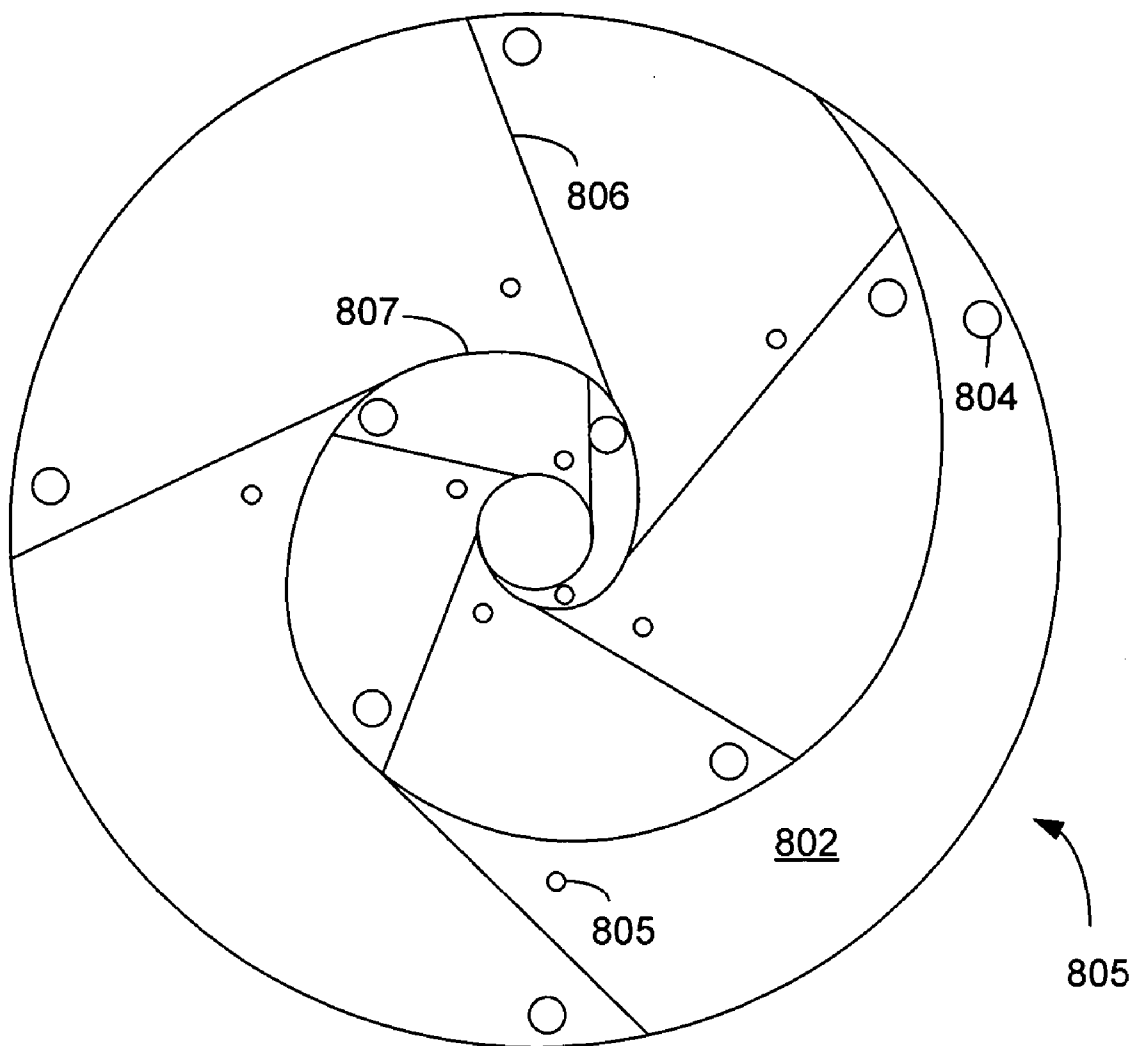


FIG. 8C

GAME SYSTEM AND METHOD

BACKGROUND

[0001] Games such as golf require large tracts of land or area. Further, their rules and structure of play limit the number of players and require long play times. Most games can be monitored or scored by computer, however such monitoring or scoring typically requires a significant amount of human involvement in terms of monitoring and data input.

[0002] Playing many games also requires a large investment of practice to master their various aspects and requirements. For example, the game of golf usually demands years of practice before one is able to achieve a level of proficiency at which a game is enjoyable and progress can be properly tracked.

[0003] Many games also lack a certain psychology that is the result of the use of machinery. Machinery can amplify a human's natural ability, yet inject a portion of chance to natural talent to conduct the game. In the example, the game of golf has steadfastly remained largely unchanged in its execution and play, except for attempts such as miniature golf or computer golf games.

SUMMARY

[0004] This document discloses a game system having both a chance element and a skill element, and which provides a mix of entertainment and sport. In an embodiment, a game system includes a plurality of bases, wherein each base is configured to host a player sending a projectile. The game system further includes a plurality of targets, arranged in a target area, wherein each target is configured to receive and identify the projectile.

[0005] The game system further includes a computer system, having at least one local station at each of the bases, and connected to a central computer, wherein each local station is configured to receive player information and wherein the central computer is configured to process scoring information based on the player information. In one exemplary embodiment, a game system includes a projectile identifying mechanism coupled to each target, each base, and to the computer system, and being configured to associate each projectile with a player and track a game performance of the projectile for input as the scoring information.

[0006] In another embodiment, a method of playing a game includes the steps of electronically associating a projectile with a player, electronically associating the projectile with a target to which the projectile is sent by the player, and forming an association between the player and the target. A method further includes generating a score for the game based on the association between the player and the target.

[0007] The details of one or more embodiments are set forth in the accompanying drawings and the description below. Other features, objects, and advantages will be apparent from the description and drawings, and from the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] These and other aspects will now be described in detail with reference to the following drawings.

[0009] FIG. 1 is a block diagram of a game system.

[0010] FIG. 2 illustrates an embodiment of a game system.

[0011] FIG. 3 shows one example of a game system layout.

[0012] FIG. 4 is a cross section of a target of a game system.

[0013] FIG. 5 is a block diagram of a game computer system.

[0014] FIG. 6 illustrates another exemplary game system plan layout.

[0015] FIG. 7 illustrates a display for a game.

[0016] FIGS. 8A-8C illustrate various embodiments of a game system portion.

[0017] Like reference symbols in the various drawings indicate like elements.

DETAILED DESCRIPTION

[0018] FIG. 1 is a block diagram of an embodiment of a game system 100. The game system 100 includes one or more projectiles 101 that are sent from one of a number of bases 102 in the direction of one of a number of targets 104, preferably by way of one of a number of projecting implements 120. The number of bases 102, projecting implements 120, and/or targets 104 can include one or any number N. The targets 104 can be physically associated with the bases 102 by a projectile return mechanism 103 configured to return each projectile 101 from a target 104 to a base 102. The bases 102, targets 104 and return mechanism 103 can be connected to, and controlled by, a game computer system 105.

[0019] One objective of a game using the game system 100 can be for a user to send each of the one or more projectiles 101 from a selected one of the bases 102 to a selected one of the number of targets 104 according to a set of game rules. For example, the game rules may have the user send a first projectile 101 from a first base 102 to a first target 104, and then send a second projectile 101 from the same or different base 102 to a second target 104, and so on. Each projectile 101 that arrives at a target 104 can be return to a selected base 102 via the projectile return mechanism 103. The projectile return mechanism 103 can be programmed to return each projectile according to a predefined program, as controlled by the game computer system 105. The projectile return mechanism 103 can include a counter and/or inventory system, which may be implemented in the game computer system 105.

[0020] The game computer system 105 can include a scoring computer 106 and a control computer 107. These computers 106 and 107 may be implemented in digital electronic circuitry, integrated circuitry, application specific integrated circuits (ASICs) or variants thereof, computer hardware, firmware, software, and/or combinations thereof. The functions executed by computers 106 and 107 can be implemented in one or more computer programs that are

executable on one or more programmable processors coupled to receive data and instructions from at least one input device and/or storage system, and to transmit data and instructions to at least one output device and/or storage system. The input devices may be coupled to the bases **102**, the projectile return mechanism **103**, and/or the targets **104**. The storage system can include a memory **108**, and the output devices may include one or more displays **110**.

[0021] The computer programs (also known as programs, software, software applications, or code) include machine instructions that can be implemented in a high-level procedural and/or object-oriented programming language, and/or in assembly or machine language. The game computer system **105** can include a back-end component such as a data server, a middleware component such as an application server, and/or a front-end component such as a client computer or graphical user interface (GUI) displayed in the one or more displays **110**, or any combination thereof. These components may be interconnected by any form of digital data communication medium or network.

[0022] The scoring computer **106** is adapted to track performance against the game rules, which can be stored in the memory **108**, and to keep a score which can be represented on the display **110**. In accordance with the embodiment of the game system **100**, each of the projectile **101** is associated with one of the number of bases **102** from which it is to be sent, and then associated with one of the number of targets **104** to which it is sent. An association of the projectile **101** to a base **102**, an association of a projecting implement **120** to a base **102**, and the association of the projectile **101** to a target **104** are examples of associations that can be tracked by a scoring computer **106** of the game computer system **105** to generate the score. The scoring computer **106** can track the associations by any technique, including storing a representation of the associations in the memory **108**, and/or displaying a representation of the associations on the display **110**.

[0023] FIG. 2 is a simplified depiction of an exemplary embodiment of a game system **200**. In the game system **200**, a player **202** uses a projecting implement **204** such as a club, bat, racquet, stick or any other type of projecting implement, to send one or more balls **206** or other type of projectile from a base pad **208** to one of a number of target pads **210** arranged in a target area **211**. Each of the target pads **210** includes a hole **212** leading to a branch channel **214** of a ball return system **216**.

[0024] The base pad **208** may include a tee or other ball-holding platform for holding the ball **206**, and may be sized and formed to support at least one player **202**. The ball **206** can be formed as a standard golf ball or other type of sport ball. Each ball **206** may be provided with an identifier (ID), such as a bar code, machine-readable pattern, radio frequency ID (RFID) tag, color, or any other type of ID with which the ball **206** can be identified to be associated with the base pad **208** from which the ball **206** is sent and/or the target pad **210** on which the ball **206** lands.

[0025] The target pads **210** can be arranged in the target area **211** according to any arrangement. For example, one or more sets of nine target pads **210** may be stylized as individual, condensed nine-hole golf courses. The target pads **210** can be formed of any size or shape, and need not necessarily be uniform as depicted. The target pads **210**

and/or the target area **211** can be made of a synthetic material, such as artificial turf, rubberized turf, etc. Each of the target pads **210** can be formed to accommodate a velocity of a landing ball **206**. In one example, the target pads are angled inward to form a “bowl.” In another example, the target pads **210** are made of a material that absorbs most or all of the force of a landing ball **206** so as to momentarily stop the movement of the ball **206**.

[0026] Each target pad **210** or the hole **212** provided therein can be connected to a sensor to detect when a ball **206** has made contact to the target pad, and to identify the ball **206** according to its unique ID. The hole **212** leads to a branch channel **214** of the ball return system **214**. The branch channel **214** can be formed of a rigid, smooth material that is oriented to use gravity to channel a ball **206** toward the ball return system **214**. The ball return system **214** can be another major channel toward the base pad **208**, or may accumulate one or more balls **206** for mass transport back toward the base pad **208**. The ball return system **214** can be designed to minimize the use of mechanically moving parts, and instead rely more on gravitational forces. The ball return system **214** may also include a sensor to detect and identify each ball **206** passing through it.

[0027] In accordance with rules for an exemplary game, a player **202** is allowed one hit per ball **206**. The player **202** may pay for playing on a per-ball, per-game or subscription basis. For each hit, the identity of a player **202**, projecting implement **204**, and/or projectile **206** is determined and stored in a computer. The identity of a target associated with each hit, via target pad **210** or hole **212**, is also determined and stored in the computer for scoring. As explained in more detail below, the computer can generate a record of the player's status or results, per hit or per game. This record can be displayed on a user interface display or general display for public viewing.

[0028] FIG. 3 shows one exemplary embodiment of an arrangement of a game system **300**, in which a number of bases **302** are arranged in each of a number of base groups **304**. The base groups **304** are in turn grouped and arranged within a base area **306**. The area within the system **300** outside of the base area **306** represents a target area **308** having a number of targets **310**. The targets **310** may be arranged symmetrically or asymmetrically within the target area **308** in relation to the base area **306**. The game system **300** can occupy an area ranging from **50** to **300** yards in, diameter, length and/or width.

[0029] In operation, a player occupies one base **302** at a time to send a projectile to a target **310**. In one example, each of the bases **302** is configured as a golf tee-off location, and the player hits a golf ball toward one of the targets **310** that represents a “green” of a golf course. The player may occupy a single base **302** and hit a number of balls toward a number of targets **310**. Alternatively, the player may hit a single ball from one base **302** to one target **310**, and then reposition at another base **302** to hit a single ball to another target **310**. The occupation of the player of a base **302** can be tracked by computer, such as by registering with a player ID, in order to keep score for the player alone or in a group of players. Accordingly, the system **300** can be used for single player or multi-player games.

[0030] Each of the targets **310** is connected to a return system (not shown) that either sends back balls to a cen-

tralized ball distribution system, or sends balls to individual or selected bases **302**. Each base **302** may include a sensor or tracking device to electronically track an ID of each ball hit from the base **302**, and associate that ID with a player ID. Likewise, each target **310** may include a sensor or tracking device to electronically track an ID of each ball that lands at the target **310**. By associating each ball to a base **302** and a target **310**, and a base **302** to a player, a score may be generated. Suitable sensors or tracking devices include, without limitation, bar code scanners, laser detection devices, RFID readers, optical detection devices, or the like.

[0031] FIG. 4 is a cross-sectional representation of one exemplary target **400** disposed in a target area **401**. The target area **401** may be elevated in any direction, or include various elevations. The target **400** includes a foundation **402** underlying an impact surface **404**. The impact surface **404** and the foundation **402** can be formed from the same material, or be formed of different materials. The foundation **402** is shaped and formed to provide structural support to the target **400**, as well as provide a contour and shape to the impact surface **404**. The impact surface **404** is adapted to receive, and absorb the impact of, a projectile. In an exemplary embodiment, the impact surface **404** should be formed of a material to absorb all or nearly all of the projectile's momentum to inhibit the projectile from bouncing or reflecting off the target **400**.

[0032] The foundation **402** and impact surface **404** define hole **406** through which the projectile can pass. The hole **406** may be situated substantially in the middle or at the lowest part of the target **400**, in an arrangement in which the impact surface **404** and the foundation **402** can direct a projectile toward the hole **406**. The hole **406** may be any shape, dimensions or depth. The hole **406** is connected to a return branch **408** of a projectile return system (not shown). The return branch **408** and the projectile return system can also be configured for efficient draining of water and/or passage of waste. The target **400** may also include a barrier **415** that acts as a rim or lip to further contain a projectile and direct the projectile toward the hole **406**. The barrier **415** may encompass all or part of the target area.

[0033] A projectile detector **410** is connected to the impact surface **400**, or to a substantially planar detection surface disposed under the impact surface, to detect an impact of the projectile against the target **400**. The projectile detector **410** can include a detector surface for detecting pressure, movement, or the like, caused by the projectile as it impacts with the impact surface **404**. Such impact is converted into an electrical signal by the projectile detector **410** for processing by the game computer system.

[0034] A projectile reader **412** is disposed at or near the hole **406** to read the ID of the projectile that has made impact with the impact surface **404** and has entered into the hole **406**. Thus read, the projectile can be associated with a base, and a player, from which it was sent, to generate a score associated with the target **400**. The target **400** may be provided with an audio/visual component **414** for generating an audio and/or visual signal when impact of a projectile is made to the impact surface **400**, or at any other time during a game. Example audio signals include beeps, horns, tunes, etc. Example visual signals include various colored lights, such as light emitting diodes (LEDs), incandescent bulbs or the like, an image, or a video, etc.

[0035] The projectile detector **410**, projectile reader **412** and/or audio/visual component **414** may be under the control of a controller **405**. The controller **405** may be located near or under the target **400**, or may be located remotely from the target **400**. The controller **405** may include logic circuitry or computer program to receive input signals and generate output signals related to the game. The controller **405** can be electrically or mechanically connected to one or more of the projectile detector **410**, the projectile reader **412** and audio/visual component **414**.

[0036] FIG. 5 is a block diagram of one embodiment of a game computer system **500** for use with a game system as described herein, and for scoring and playing a game. The game computer system **500** includes a housing **502** for containing various components of the game computer system **500**. The housing **502** can be made of rigid plastic, or other rigid material. The game computer system **500** also includes a central processing unit (CPU) **504** and a memory **506**, each of which may be implemented in digital electronic circuitry, integrated circuitry, application specific integrated circuits (ASICs) or variants thereof, computer hardware, firmware, software, and/or combinations thereof. For example, the memory can be a hard disk drive, optical disk, random access memory (RAM), or other type of memory.

[0037] The memory **506** may store, among other data, one or more computer programs for execution by the CPU **504**. These computer programs may include instructions to execute one or more games according to predefined and/or user-selected rules and processes. The computer programs may be client application programs delivered from a central server, or locally-stored application programs. The memory **506** may also store historical player and/or scoring data, game result data, etc.

[0038] The game computer system **500** can include one or more input/output (I/O) devices **508**, including but not limited to, a wireless receiver, a wireless transmitter, a printer, a keyboard, a mouse. For example, a wireless receiver can be used to receive information from a hand-held transmission device such as a cell phone, personal digital assistant (PDA), hand-held computer, etc.

[0039] The game computer system **500** can also include a credit card reader **510** and a display **512**. The credit card reader **510** can be equipped with a magnetic strip reading mechanism, or a mechanism for receiving a credit card number. For example, a player can "swipe" a credit card through the reading mechanism. Alternatively, the player can enter credit or payment information into the computer system **500** via a display, a keyboard or other input device. The display **512** displays game data, player data, or any other data associated with the game system. For instance, the display **512** can show scoring information for one or more players, game rules, or credit information. The display **512** can also display advertisements that are either randomly generated or generated specifically for a player.

[0040] The CPU **504**, memory **506**, I/O device **508**, credit card reader **510**, and/or display **512** can communicate with each other via a databus **514**. The databus **514** can be any data transmission medium such as a cable, and can include any type of data communication interface. The game computer system **500** can be a portable device, such as a handheld computer or PDA. Alternatively, the game computer system **500** can be a stationary computer, such as a

kiosk or desktop-type computer. The game computer system **500** also includes a physical connector **516** for mounting to an object, such as the base area of the game. The physical connector **516** can also include a stand or a mounting mechanism for mounting the game computer system **500** in a particular location or orientation. The game computer system **500** also includes a data connector **518** for communication of data to other devices, and which may be co-located with the physical connector **516**.

[0041] FIG. 6 is a plan view of an exemplary game area **600** for a game system. The game area includes a number of targets **602** of various sizes and/or shapes. The targets **602** are arranged within a target area **604**. The game area **600** also includes a number of bases **606** arranged within a base area **608**. The game area **600** can include a number of obstacles **610** such as a wall or barrier, or an object representing a sand trap or water feature, for example. The obstacles **610** can be interspersed throughout the target area **604** among the targets **602** as well.

[0042] Each target **602** includes a hole **603**. The target **602** is adapted for absorbing momentum of a projectile that is projected onto it, and directing the projectile to the hole **603**. Each base **606** and each hole **603** are associated with a sensor or reader for sensing the presence and identity of a projectile. The game area **600** may be enclosed by a housing, or be open. The game area **600** may also have fans or other airflow regulating mechanism to provide a controlled cross-wind for additional challenge.

[0043] In a game, a projectile is placed at a base **606** where it is identified and tracked by a computer. The computer also associates the projectile with a player. The player launches the projectile from the base **606** to one of the targets **602** where the projectile is again identified and tracked. The projectile can be identified and tracked at the target **602** either by a mechanism associated with the target **602** or the hole **603**. The projectile is directed to the hole **603** where it is received by a return mechanism (not shown) that returns the projectile to a selected base area **608**. The return mechanism is connected to a distribution mechanism (not shown) that redistributes the projectile to the same or another base **606**.

[0044] In alternative implementations, the targets **602** can be hanging from a structure overhanging the game area **600**, or posted on a structure projecting up from the target area **604**. The targets **602** can also be movable or interchangeable for variation of play. The game area **600** can also be replicated one or more times in the same general geographic area for increasing the scale and number of players.

[0045] In one specific example, the game area **600** resembles a nine-hole golf course, in which the target area **604** represents the fairway and each target **602** represents a green, and each projectile is a golf ball. Players tee off from a base **606**, and can rotate from one base to another. Scoring is automatically processed by associating a golf ball to a player, and then determining which targets **602** the golf ball is sent. To conserve geographic area, the targets **602** and/or target area **604** can be tilted or angled to face one or more of the base areas **608**.

[0046] FIG. 7 illustrates a display **700** for displaying a status or result of a game played in accordance with the description herein. The display **700** allows a player to

monitor his or her progress or status, as well as allows an audience to monitor one or more player's progress or status. In this manner, competitions between two or more players can be displayed and monitored by an audience.

[0047] The display **700** includes a status indicator **702** for a player to indicate a particular status achieved by a player during a game or after completion of one or more games. In an example, the status indicator **702** includes colors or graphics to indicate one or more of a number of status levels that are achievable in the game. For instance, the player can be assigned a "reward key" of a scale of rewards (i.e. from "genius" to "fair") that is represented in the status indicator. The status indicator **702** can also include numerical score data, such as number of targets successfully hit, cumulative score, etc. The display **700** further includes a player information area **704** providing informational or statistical data on one or more players. The player information area **704** can include player name, age, number of games played, status, or other information.

[0048] The display **700** can also include one or more graphics **706**, such as videos, pictures, advertisements, logos, etc., that may be of interest to a viewer, and that may or may not pertain to a game. The one or more graphics **706** can be utilized by a sponsor of a game, a player, a city, or for providing thematic relationship for the game. For instance, the game may include a western theme of cowboys, horses, and the like. The one or more graphics **706** can include pictures, videos and/or advertisements that relate to the western theme.

[0049] FIGS. 8A-8C show various embodiments of a game system portion. FIG. 8A is a plan view of a playing area **801** having a number of sectors **802** defined by separators **806** and arranged around a central area **810**. In the embodiment, the playing area **801** is a substantially circular area with substantially equal-sized pie-shaped sectors **802**. The central area **810** can be raised above the playing area **801**. In one embodiment, the central area **810** includes a fountain, a video screen, or other visual object. Each sector **801** includes a base **804** and a target **808**. The base **804** is used for sending a projectile to the associated target **808** in the sector **802**. As described above, each projectile can be identified and registered with a computer scoring and tracking system. Each base **804** and target **808** can be electronically connected with a central game computer system for identifying a projectile sent from each base **804** to each associated target **808**, and track information such as player identity, number of hits, sector number, etc.

[0050] The playing area **801** may be substantially planar, or may include a variable topography, such as a number of humps per sector **802**. In one embodiment, the playing area **801** represents a "putting green" portion of a golf-type game, and there are nine sectors **802**. Thus, a player can perform long-range golf-style hitting as described above with reference to FIGS. 2, 3 and 6, and then perform short-range golf-style putting in the playing area **801**.

[0051] FIG. 8B shows a plan view of another embodiment of game system, in which a playing area includes a central portion **810** that is offset from the actual center of the playing area, to create sectors **802** of varied or variable sizes. FIG. 8C is a plan view of yet another embodiment of a game system. A playing area **805** includes a number of sectors **802** that are defined by separators **806** and a spiral boundary **807**.

Accordingly, the sectors **802** may be arranged from longest to shortest in a direction from the outside to the inside of the playing area **805**.

[0052] Although a few embodiments have been described in detail above, other modifications are possible. The logic flows described above do not require the particular order shown, or sequential order, to achieve desirable results. Other embodiments may be within the scope of the following claims.

1. A method of playing a game, comprising:
electronically associating a projectile with a player;
electronically associating the projectile with a target to which the projectile is sent by the player;
forming an association between the player and the target;
and
generating a score for the game based on the association between the player and the target.
2. A method in accordance with claim 1, wherein the projectile includes a unique identifier.
3. A method in accordance with claim 2, wherein electronically associating the projectile with the player includes reading the identifier.
4. A method in accordance with claim 2, wherein electronically associating the projectile with the target includes reading the identifier.
5. A method in accordance with claim 2, wherein the identifier is one of a group of identifiers that consists of: a bar code, a color code, a pattern code or a radio-frequency identifier (RFID) tag.
6. A method in accordance with claim 1, further comprising displaying the score on a display.
7. A game system, comprising:
a plurality of bases, wherein each base is configured to host a player sending a projectile;
a plurality of targets, arranged in a target area, wherein each target is configured to receive and identify the projectile;
a computer system, having at least one local station at each of the bases, and connected to a central computer, wherein each local station is configured to receive player information and wherein the central computer is configured to process scoring information based on the player information; and
a projectile identifying mechanism coupled to each target, each base, and to the computer system, and being configured to associate each projectile with a player and track a game performance of the projectile for input as the scoring information.

8. A game system in accordance with claim 7, wherein the plurality of bases includes a first group of bases and a second group of bases.

9. A game system in accordance with claim 8, wherein the first group of bases are configured for sending a projectile toward a group of the plurality of targets.

10. A game system in accordance with claim 9, wherein the second group of bases are configured for sending a projectile toward one of the plurality of targets.

11. A game system in accordance with claim 7, further comprising an enclosure for enclosing at least the plurality of targets.

12. A game system in accordance with claim 11, further comprising a mechanism coupled to the enclosure for providing a regulated air flow.

13. A game system in accordance with claim 7, wherein each of the plurality of targets includes a visual component.

14. A game system in accordance with claim 13, wherein the visual element is a light that is activated upon detection of a projectile making contact with the target.

15. A game system in accordance with claim 7, wherein each of the plurality of targets includes an audio component.

16. A game system in accordance with claim 15, wherein the audio component is a speaker that generates a sound upon detection of a projectile making contact with the target.

17. A game system, comprising:

a base area having a number of bases and configured to host a number of players;

a target area having a number of targets;

a number of projectiles; and

a computer system for identifying and tracking a player of the game system by associating the player to each of the number of projectiles, each of the number of bases, and each of the number of targets accessed by the player.

18. A game system in accordance with claim 17, wherein the projectiles include a number of golfing-type balls encoded with an identifier.

19. A game system in accordance with claim 18, wherein the player includes a number of golfing-type clubs, each club being encoded with an identifier.

20. A game system in accordance with claim 19, wherein the computer system includes a detector associated with each of the number of bases, the detector being configured to detect the identifier of each ball and the identifier of each club.

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