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- (72) Inventor; and
- (71) Applicant : WAYANS, Damon K. [US/US]; 2219 E. Thousand Oaks Boulevard #299, Thousand Oaks, California 91362 (US).
- (74) Agent: NORTON, Todd A.; Volpe and Koenig, P.C., 30 S. 17th Street, United Plaza, Suite 1600, Philadelphia, Pennsylvania 19103 (US).

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- (54) Title: METHOD AND APPARATUS FOR IMPLEMENTING VIDEO GAME THAT INCLUDES SOCIAL DARTS

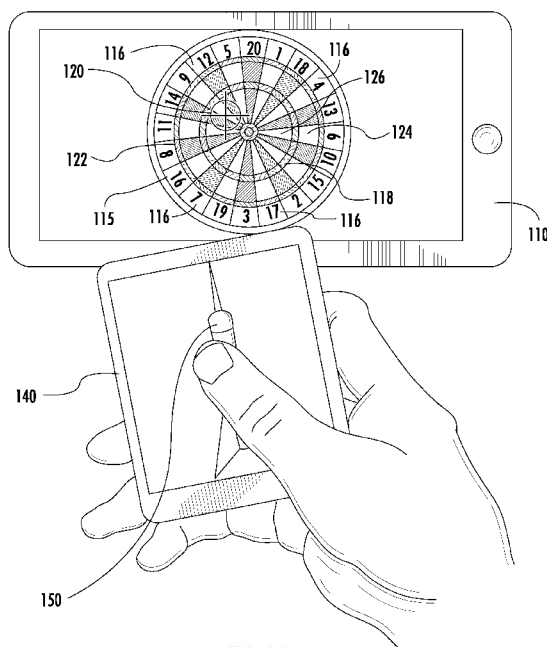


FIG. 1A

(57) Abstract: Described herein is a video game application that is executed on a first computing device, and related technologies for implementing the video game application. In the video game application, the user controls the direction of a simulated dart by tilting and/or otherwise moving a second computing device in different directions. The simulated dart traverses a terrain through conditions to hit a target displayed on the first computing device. To gain points in the video game application, the user must control the simulated dart to strike the target at certain locations.

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METHOD AND APPARATUS FOR IMPLEMENTING VIDEO GAME THAT INCLUDES SOCIAL DARTS

CROSS REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. provisional application no. 61/599,143, filed February 15, 2012, which is incorporated by reference as if fully set forth.

BACKGROUND

[0002] In recent years, tablet computers and similar devices have become very popular. These computer devices frequently include motion sensors (such as accelerometers) that detect the movements of the computer device and generate corresponding motion information that may be used by applications that are running on the devices. Some video game applications use this motion information to control virtual objects in a way that parallels the generated motion information. For example, in some car racing video games, steering of the car is performed by tilting and/or moving the computer device to indicate which direction the car should be steered.

[0003] While a number of successful computer-based video games are currently on the market, users are always in search of new and interesting approaches to video games. Thus, the video game and related technologies described herein would be advantageous.

SUMMARY

[0004] Described herein is a video game application that is executed on a first computing device, and related technologies for implementing the video game application. In the video game application, the user controls the direction of a dart by tilting and/or otherwise moving a second computing device in different directions. The simulated dart traverses a simulated or virtual terrain through conditions to hit a target displayed on the first computing device. To gain points

in the video game application, the user must control the simulated flight of the dart to strike the target at certain locations.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] Understanding of the present invention will be facilitated by consideration of the following detailed description of the preferred embodiments of the present invention taken in conjunction with the accompanying drawings, in which like numerals refer to like parts:

[0006] Figure 1A illustrates a first computing device, wherein the disclosed video game application is running, and a second computing device to control the simulated path of a dart launched at the first computing device;

[0007] Figure 1B illustrates a first computing device depicting a simulated or virtual terrain through conditions to hit a target, an avatar, player information and score displayed on the first computing device;

[0008] Figures 2A-D illustrate the second computing device displaying the user interface used to simulate the dart and for simulating the throw of the dart described in the disclosed video game with Figure 2A depicting yaw, Figure 2B depicting pitch, Figure 2C depicting roll and Figure 2D depicting the speed and initiation of a simulated dart throw;

[0009] Figure 3 is a block diagram of the general components of an example computing device, such as the first or second computing device, on which the disclosed video game application may be executed;

[0010] Figure 4 illustrates an example system architecture wherein features described herein may be implemented; and

[0011] Figure 5 illustrates a method of interacting with a video game.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0012] It is to be understood that the figures and descriptions of the present invention have been simplified to illustrate elements that are relevant for a clear understanding of the present invention, while eliminating, for the purpose of clarity, many other elements found in mobile applications and other

computer games and programs. Those of ordinary skill in the art may recognize that other elements and/or steps are desirable and/or required in implementing the present invention. However, because such elements and steps are well known in the art, and because they do not facilitate a better understanding of the present invention, a discussion of such elements and steps is not provided herein.

The disclosure herein is directed to all such variations and modifications to such elements and methods known to those skilled in the art.

[0013] Figure 1A shows a configuration of video game application system. As illustrated in Figure 1A, there is a first computing device 110 and a second computing device 140. The video game application may depict a dart game. Darts is a form of throwing game in which darts are thrown at a circular target (dartboard) fixed to a wall. In the present application, the dart is “thrown” from a second computing device 140 to a target 115 located on first computing device 110.

[0014] First computing device 110 may be a tablet computer, a television, a projecting display, a display coupled to a desktop computer, a display coupled to a laptop computer, or even a portable computing device, such as a Smartphone, for example. Second computing device 140 may be any one of the types of computer devices identified for the first computing device 110, although generally second computing device 140 may be a portable computing device that may be handheld, such as a Smartphone or iPhone, MP3 player having an interactive display or iPod, or tablet computer or iPad.

[0015] The first computing device 110 may provide the system for running the application. The first computing device 110 may provide a visual representation of the target 115. As is depicted in Figure 1A, target 115 may be displayed on first computing device 110 as a dartboard. Other targets may be displayed as well, including simulated clay pigeons, balloons, animals, bombs, airplanes, and any other items that may serve as a target. For the ease of description, the remainder of the present description will refer to target 115, which includes any type of target including, but not limited to, the depicted dartboard.

[0016] In addition, first computing device 110 is depicted as a single computing device with a single display. This is done for ease of description and understanding of the present invention. It is expected that the present description includes multiple first computing devices 110, such as for displaying the target 115 to multiple players located in different locations, for example.

[0017] Second computing device 140 may be used to simulate the launch or throw of the dart 150 at target 115. A player may control the simulated flight of the dart 150 by controlling the position and angle of the second computing device 140, and/or dart 150. A player may rotate the second computing device 140 to affect pitch, yaw and roll of the dart 150. The player may additionally or alternatively angle the dart 150 on the screen to affect the yaw of the dart 150. The second computing device 140 may convey information regarding the pitch and roll, and the yaw (combined from the angle of the device and angle of the dart 150 on the screen) to the first computing device 110 so that a marker 120 may be displayed on target 115, for example. Marker 120 may represent the location that the dart 150 as configured would impact. The player may swipe the display of the second computing device 140 to initiate the simulated flight of dart 150 by imparting speed and acceleration. The speed and acceleration of the dart 150 may be conveyed from second computing device 150 to first computing device 110. The information conveyed to first computing device 110 from second computing device 140 may be used to calculate the location of the marker 120 and to calculate and show the impact of the simulated dart 150 throw.

[0018] The second computing device 140 may convey information indicative of the position and angle of the second computing device 140 and/or dart 150 to the first computing device 110. This information may include information indicative of the pitch, yaw, roll, and/or speed of the dart 150.

[0019] The first computing device 110 may receive the information from the second computing device 140, and for pre-simulated flight, provide a marker 120 on the displayed target 115 that indicates where the simulated dart 150 is aimed, or for post-launch of the dart 150, may depict the simulated dart 150 striking the displayed target 115.

[0020] For the ease of description, the remainder of the present description will refer to dart 150, which includes any type of projectile including, but not limited to, the depicted dart. Other projectiles may include bombs, torpedoes, bullets, arrows, coins, baseballs, footballs, by way of non-limiting example only.

[0021] In addition, second computing device 140 is depicted as a single computing device with a single display. This is done for ease of description and understanding of the present invention. It is expected that the present description includes multiple second computing devices 140, such as for controlling and displaying different darts 150, including darts controlled by different players, which players may or may not be in the same location, for example.

[0022] Figure 1A shows a first computing device 110, wherein the disclosed video game application is running. This first computing device 110 functions as the host of the game and may serve as the target 115. The first computing device 110 includes a touch screen display, on which the target 115 of the video game application is displayed. As shown in Figure 1A, the target 115, such as a dart board, provides the target or targets for which players aim the dart 150.

[0023] Referring now additionally to Figure 1B, there is shown a depiction of the first computing device 110 and target 115 having a terrain 160 depicted therewith. First computing device 110 may include a multitude of different arrangements and/or obstacles 160 that the players must overcome with their dart 150 to hit the target 115. These arrangements and obstacles 160 may include wind, elevation of land, friendly targets that are to be avoided, for example (depicted in Figure 1B as elevation of land). Figure 1B also shows a marker 120 overlayed onto the target 115 to aid a player in aiming their respective dart 150 using the second computing device 140.

[0024] The display depicted on the first computing device 110 may vary based on interaction from a user using a second computing device 140. That is, for example in the situation where there are boulders, hills and rocks (obstacles 160) that may be in between a user and the target 115, movements of the second computing device 140 may enable the player to “see around” a given obstacle 160,

and this “seeing around” may be depicted on the display of the first computing device 110 by the display moving the obstacle 160 from the field of view of the player and providing a different view of the target 115. For example, before initiating a simulated dart throw the first computing device 110 may display a target 115 at a distance with terrain and obstacles 160 in the foreground that need to be overcome in order to navigate a dart 150 to the target 115. Upon initiation by the second computing device 140, the player’s point of view may change, where the image displayed on the first computing device 110 may be modified to account for such a change in view. This may include removing the depicted obstacles 160 from the display of the first computing device 110 leaving just the target 115 and its immediate background displayed to the user. Further, once a dart 150 has completed its full trajectory, the image may return to a full screen with additional information including avatar 180 and score 170.

[0025] In addition to serving as the target 115, the first computing device 110 may display stats of the latest games and tournaments, top players, and message boards in between the game screen displays. During play, the first computing device 110 may display the target 115 in the center of the screen. On the right side, for example, of the screen an avatar picture (shown as 180 in Figure 1B) and name of the player (190 in Figure 1B) in competition with the score and rank of that player may be displayed. On the right side, the avatar picture 180 of the player whose turn it is to play may be displayed. Such a display may include the player’s information including score (shown as 170 in Figure 1B) and rank, for example.

[0026] During play, the first computing device 110 serves as the target 115. Once a player is ready to throw a dart 150, the player may initiate a dart 150 throw by actuating the respective second computing device 140, as will be described with respect to Figure 2 below. This actuation may change the display of the tablet 110 as described. This may include “looking around” obstacles 160 as described herein. The image displayed on the first computing device 110 may provide a display of the target 115. The first computing device 110 may also display a marker 120 overlaid on target 115 which is a result of the user

actuation of the second computing device 140. This marker 120 may indicate the “aim” or impact of the dart 150 about to be thrown.

[0027] The video game application may also include sound effects, such as providing a “whoosh” sound indicating that the dart 150 has been thrown and simulates its flight through the air. This “whoosh” ends and a “thud” results with a depiction of the results of the simulated dart 150 hitting target 115 and being displayed on the first computing device 110 at its point of impact.

[0028] Once the target 115 has completed its simulated trajectory and hits the target 115 or not, the first computing device 110 may display the full image with the attendant information described above. At the end of the game, the first computing device 110 may display the winner’s name and avatar 180 on a full screen display, and may toggle with the winners score 170 and nightly game statistics, for example.

[0029] Game play may start with a score of 301, 401, 501, 601, or 1001, for example. The object being to get exactly zero by throwing rounds of three darts and subtracting the sum of those darts from the respective player’s current score. Each dart may be scored by a number 116 where it lands within the target 115. The inner ring 118 is worth three times the number indicated, the outer ring 122 is worth two times the number indicated and the two large sections 124, 126 score exactly the number indicated. For example, on a given turn where a total of three darts are thrown, the highest possible score is 180 achieved by throwing three triple 20s, each dart worth 60 points.

[0030] Generally, a regulation dartboard is 17 3/4 inches in diameter and is divided into twenty radial sections numbered from 1-20. Each section is separated with metal wire or a thin band of sheet metal. The best dartboards have the thinnest wire, so that the darts have less chance of hitting a wire and bouncing out. The numbers indicating the various scoring sections of the board are also normally made of wire, especially on tournament-quality boards. The target 115 may mimic the dartboard in size and configuration to provide for natural playing of the present application.

[0031] Similarly, in darts the dartboard is hung so that the bullseye is 5 feet 8 inches from the floor, eye-level for a 6-foot person. The oche, which is the line behind which the throwing player must stand, is generally 7 feet 9+1/4 inches from the face of the dartboard measured horizontally. Alternate methods of measuring the distance from the oche to the dartboard exist. The configuration of the dartboard and the oche may be accounted for in the present application and may provide effects on the dart 150 as it is thrown.

[0032] The depiction of the dart 150 may include the barrel, the shaft and the fletching, and may depict the common lengths of 32 mm and 41 mm.

[0033] The dart 150 barrels may interact with the user as if the dart 150 comes in a variety of weights and constructions such as being made from brass, silver-nickel, or a tungsten alloy. The barrels of the darts may be any shape including the standard cylindrical, torpedo, or ton.

[0034] The shafts of dart 150 may mimic various lengths and may be depicted to be made from plastics, nylon polymers, or metals such as aluminum and titanium; and can be rigid or flexible. A player may select a dart 150 from a variety of dart options, by shopping in one or more dart shops, for example. The variety of dart options may include different dart shapes, materials, sizes and weights. Longer shafts provide greater stability and allow a longer flight for a given speed imparted into the dart which in turn can lead to a closer grouping; but they also shift the weight towards the rear causing the dart to tilt backwards during flight, requiring a harder, faster throw. A longer shaft will however make the dart less responsive and increase the chance of "wobbling". Generally speaking a heavier dart will require a greater speed to be imparted into the dart to achieve the same distance throw.

[0035] The choice of barrel, shaft, and flight will depend a great deal on the individual player's throwing style. For competitive purposes a dart cannot weigh more than 50g including the shaft and flight and cannot exceed a total length of 300 mm. The present depicted darts 150 may be simulated with such restrictions.

[0036] The standard dartboard is divided into 20 numbered sections, scoring from 1 to 20 points, by wires running from the small central circle to the outer circular wire. Circular wires within the outer wire subdivide each section into single 124, 126, double 122 and triple 118 areas.

[0037] Various games can be played using the present application. Standard darts as may be understood by those possessing an ordinary skill in the pertinent arts. There are many games that can be played on a dartboard, but darts generally refers to a game whereby the player throws three darts per visit to the board with the goal of reducing a fixed score, commonly 501 or 301, to zero ("checking out"), with the final dart landing in either the bullseye or a double segment. A game of darts is generally contested between two players, who take turns. Although any number of players may be used. Each turn consists of throwing three darts. When two teams play, the starting score is sometimes increased to '701' or even '1001'; while the rules remain the same.

[0038] A throw that reduces a player's score below zero, to exactly one, or to zero but not ending with a double is known as "going bust", with the player's score being reset to the value prior to starting the turn, and the remainder of the turn being forfeited. A darts match is played over a fixed number of games, known as legs. A match may be divided into sets, with each set being contested as over a fixed number of legs.

[0039] Although playing straight down from 501 is standard in darts, sometimes a double must be hit to begin scoring, known as "doubling in", with all darts thrown before hitting a double not being counted. Other variants of darts may include Round the Clock, Archery darts, Audio darts, Cricket, Dartball, Dart Golf, Fives, Halve, Killer, Lawn Darts, Shanghai, Ranger, by way of non-limiting example. All of these variants and more can be simulated on the two computing devices of Figures 1 and 2 and run on the disclosed video game application.

[0040] Figures 2 A-D show a user second computing device 140 displaying the user interface used to throw the dart 150 in the disclosed video game application. Figures 2 A-D generally depicts a user interaction with a second computing device 140 in order to adjust the dart's 150 simulated flight to

overcome obstacles and hit the target (not shown in Figures 2 A-D). The terrain of a given game may be decided by the player who plays first, or randomly, or by a group decision, for example. The terrain may include wind, precipitation and other effects that add challenge to the game, which is something that cannot be simulated in the standard dart game. In addition, the target 115 may also move which is a further challenge to the player.

[0041] The simulated flight of the dart can be affected by the interaction or adjustment of the second computing device 140, and/or the player's thumb, finger or fingers. Adjustments to vary the simulated dart flight result from pitch (lateral axis) and yaw (vertical axis) and to roll (longitudinal axis) even though roll of a dart 150 generally does not affect its flight, as well as varying the speed of the dart 150. Other projectiles may be influenced by the roll. Also, the speed and/or acceleration of the second computing device 140 and/or the player's finger or fingers can effect the simulated flight of the dart 150. This interaction further includes an initiation to throw the dart 150 at the target 115. The second computing device 140 may be used to throw the dart 150, and the movement of the dart 150 may be based on the position of the second computing device 140 and movement of the user's thumb on the screen. Alternatively, the second computing device 140 could be held steady in a horizontal plane and the player's thumb or finger action can be the only factors affecting the simulated flight of the dart 150.

[0042] The simulated flight of the dart 150 is affected similarly to the flight of an actual dart. That is, the dynamics of the flight is determined. The flight dynamics is controlled in three dimensions. The three flight parameters are the angles of rotation in three dimensions about the dart's center of mass, known as roll, pitch and yaw. For the dart, roll generally does not affect the flight although as other projectiles may be used in the video game, other projectiles may be affected by the roll of the projectile. Roll, pitch and yaw refer to rotations about the respective axes starting from a defined equilibrium state.

[0043] As depicted in Figure 2A, a user may adjust the angle of the dart 150 with respect to the vertical axis or vertical plane, also referred to as yaw. A

user may adjust the placement and angle of the thumb during initiation of the dart 150 throw to affect the yaw angle of the dart 150. For example, a user may pull back his thumb towards a corner of the second computing device 140 to provide an angle to the dart 150. The yaw angle of the dart 150 may also be determined by the overall angle of a user's second computing device 140.

[0044] As depicted in Figure 2B, a user may adjust the angle of the dart 150 with respect to a lateral axis, also referred to as pitch. The adjustment of the pitch of the dart 150 may generally be defined by the tilt of the user's second computing device 140 from the front to the aft of the dart 150.

[0045] As depicted in Figure 2C, a user may adjust the angle of the dart 150 with respect to the axis on which the dart 150 travels, also referred to as roll. The adjustment of roll of the dart 150 may generally be defined as the tilt of the user's second computing device 140 about the axis of the dart 150. That is, generally side-to-side tilt of the user's second computing device 140.

[0046] As depicted in Figure 2D, a user may adjust the speed and/or acceleration of the dart 150 and initiate the flight of the dart 150 with the current configurations in order to send the dart 150 on its way to the target 115. A user, by initiating the throw of the dart 150 by moving his thumb forward on the second computing device 140, may impart speed to the dart 150 by moving their thumb more or less quickly.

[0047] While a marker 120 may be provided to aid a player in hitting selected portions of the target 115, the skill of the player may affect the ability to hit the marker 120. In simulating a dart game, a player's skill may be recorded and may evolve over time and the playing of dart games. This skill may affect the ability of a player to hit the target 115 or the marker 120 just as would be the case in a real dart game.

[0048] For example, in darts the path of the optimal location to throw a dart will vary based on the skill of the player. Using a rating where a player's skill is graded with a grade of 0 being a perfect player and a grade of 100 being a player who throws randomly, the optimal area to aim for on the target 115 in order to maximize the player's score varies significantly based on the players

skill. The skilled player, those players graded closer to 0, may aim for the center of the desired location on target 115 and as the player's skill reduces, those players whose grade is closer to 100, may need to aim slightly up and to the left of the desired location on target 115. The marker 120 may account for the ability of the player, and/or the marker 120 may denote the position that a perfect player should aim, and/or the ability of a player to hit the marker 120 or target 115 may depend on the skill of the player.

[0049] Players may also interact using the second mobile device 140, to upload avatar pictures 180, enter names 190 and locations, link their profile with their favorite social pages, and the like. Players may also keep albums in which the players can store pictures and comments of memorable dart games.

[0050] Players may also buy assets for the game, such as new terrains 160 and new sets of darts 150. Coupons, tickets and other benefits may also be included. Dart 150 types may be customized and be suited for different terrains and conditions 160. The application may include a basic dart 150 set and allow the user to customize the set skin, by changing the color, uploading an image, and the like. Basic darts 150 may have limited range and speed, for example. Players may upgrade to a pro-dart model dart 150 set, with each set offering different advantages that may be utilized by a player during gameplay. Additionally, players may acquire and/or use a trajectory aiming tool that helps a player calculate their aiming pitch, yaw, and speed to precisely hit the target. A user may also provide wall postings and stats of top players and upcoming game statistics.

[0051] The social dart application may be downloaded to the first computing device 110 host of Figure 1A and to the respective second computing device 140. Once installed on each device, the application may scan to find available dart hosting games and request connections. The owner of the hosting first computing device 110 may accept players to be added to the game. Once connected to the hosting first computing device 110, a player can join or wait for the next game. Players may use their respective second computing devices 140 to

look at game stats, and customize their dart 150, profile exchange messages or post to the wall.

[0052] Tournaments may be organized and players may be grouped into teams. Players may also play against the system or other players in remote locations, for example.

[0053] The application may be configured that the first computing device 110 pays for the application and the second computing device 140 are provided a free version of the application.

[0054] Figure 3 is a block diagram of a computing device 300 that may be used to implement features described herein. This computing device may be the first computing device 110 and/or the second computing device 140. The computing device 300 includes a processor 302, a memory device 304, a communication interface 306, a data storage device 308, a touchscreen display 310, and a motion detector 312. These components may be connected via a system bus 314 in the computing device 300, and/or via other appropriate interfaces within the computing device 300.

[0055] The memory device 304 may be or include a device such as a Dynamic Random Access Memory (D-RAM), Static RAM (S-RAM), or other RAM or a flash memory. As shown in Figure 3, the video game application 316 may be loaded into the memory device 304.

[0056] The data storage device 308 may be or include a hard disk, a magneto-optical medium, an optical medium such as a CD-ROM, a digital versatile disk (DVDs), or Blu-Ray disc (BD), or other type of device for electronic data storage. The data storage device 308 may store instructions that define the video game application 316, and/or data that is used by the video game application 316.

[0057] The communication interface 306 may be, for example, a communications port, a wired transceiver, a wireless transceiver, and/or a network card. The communication interface 306 may be capable of communicating using technologies such as Ethernet, fiber optics, microwave,

xDSL (Digital Subscriber Line), Wireless Local Area Network (WLAN) technology, wireless cellular technology, and/or any other appropriate technology.

[0058] The touchscreen display 310 may be based on one or more technologies such as resistive touchscreen technology, surface acoustic wave technology, surface capacitave technology, projected capacitave technology, and/or any other appropriate touchscreen technology.

[0059] The motion detector 312 may include one or more three-axes acceleration motion detectors (e.g., accelerometers) operative to detect linear acceleration in three directions (i.e., the X (left/right) direction, the Y (up/down) direction, and the Z (out of plane) direction). Alternatively, the motion detector 312 can include one or more two-axis acceleration motion detectors 312 which can be operative to detect linear acceleration only along each of the X or Y directions, or any other pair of directions. Alternatively or additionally, the motion detector 312 may be or include an electrostatic capacitance accelerometer that is based on a technology such as silicon micro-machined MEMS (Micro Electro Mechanical Systems) technology, a piezoelectric type accelerometer, a piezoresistance type accelerometer, or any other suitable type of accelerometer.

[0060] When the touchscreen 310 receives data that indicates user input, the touchscreen 310 may provide the data to the video game application 316. Alternatively or additionally, when the motion detector 312 detects motion, the motion detector 312 may provide the corresponding motion information to the video game application 316.

[0061] As shown in Figure 3, the video game application 316 is loaded into the memory device 304. Although actions are described herein as being performed by the video game application 316, this is done for ease of description and it should be understood that these actions are actually performed by the processor 302 (in conjunction with the persistent storage device, network interface, memory, and/or peripheral device interface) in the computing device 300, according to instructions defined in the video game application 316. Alternatively or additionally, the memory device 304 and/or the data storage device 308 in the computing device 300 may store instructions which, when

executed by the processor 302, cause the processor 302 to perform any feature or any combination of features described above as performed by the video game application 316. Alternatively or additionally, the memory device 304 and/or the data storage device 308 in the computing device 300 may store instructions which, when executed by the processor 302, cause the processor 302 to perform (in conjunction with the memory device, communication interface, data storage device, touchscreen display, and/or motion detector) any feature or any combination of features described above as performed by the video game application 316.

[0062] The computing device 300 shown in Figure 3 may be, for example, an Apple iPad, or any other appropriate computing device. The video game application 316 may run on an operating system such as iOS, Android, Linux, Windows, and/or any other appropriate operating system.

[0063] Figure 4 shows an example architecture 400 wherein features described herein may be implemented. The example architecture 400 includes a web site system 410, a first computing device 420, the Internet 430, and the second computing device 440. The web site system 410 of Figure 4 includes hardware (such as one or more server computers) and software for implementing a video game as described. The first computing device 420 described above may be used to download and run a local application to interact with other and/or software for social darts. Alternatively, an end user may use the first computing device 420 to display and interact with the web pages that make up the interactive web site. The device 420 shown in Figure 4 may be, for example, a laptop or desktop computer, a tablet computer, a smartphone, a PDA, and/or any other appropriate type of device.

[0064] The web site system 410 includes a web server module 412, a web application module 414, and a database 416, which, in combination, store and process data for providing the web site. The web application module 414 may provide the logic behind the web site provided by the web site system 410, and/or perform functionality related to the generation of the web pages provided by the web site system 410. The web application 414 may communicate with the web

server module 412 for generating and serving the web pages that make up the web site.

[0065] The first computing device 420 may include a web browser module 422, which may receive, display, and interact with the web pages provided by the web site system 410. The web browser module 422 in the first computing device 420 may be, for example, a web browser program such as Internet Explorer, Firefox, Opera, Safari, and/or any other appropriate web browser program. To provide the web site to the user of the first computing device 420, the web browser module 422 in the first computing device 420 and the web server module 412 may exchange HyperText Transfer Protocol (HTTP) messages, per current approaches that would be familiar to skilled person.

[0066] The second computing device 440 may include a web browser module 4422, which may receive, display, and interact with the web pages provided by the web site system 410. The web browser module 442 in the second computing device 440 may be, for example, a web browser program such as Internet Explorer, Firefox, Opera, Safari, and/or any other appropriate web browser program. To provide the web site to the user of the second computing device 440, the web browser module 442 in the second computing device 440 and the web server module 412 may exchange HyperText Transfer Protocol (HTTP) messages, per current approaches that would be familiar to skilled person.

[0067] As described hereinabove, details regarding the interactive web site and the pages of the web site (as generated by the web site system 410 and displayed/interacted with by the user of the first computing device 420) are provided.

[0068] Registration to the site is required in order to interact using the first computing device 420. Users can create an account with the web site, and/or may log in via credentials associated with other web sites. With each user account, the user has a personal page. Via this page, users can establish “friends” links to other users, transmit/receive messages, and publish their bookmarks. Users can also publish in forums on the site, post comments, and create bookmarks.

[0069] The web site may include any number of different web pages, including but not limited to the following: a front (or “landing”) page; a search results page; an account landing page; and a screening window page.

[0070] Via the account landing page, the user is able to perform actions such as: set options for the user’s account; update the user’s profile; customize the landing page and/or the account landing page; post information; perform instant messaging/chat with other users who are logged in; view information related to bookmarks the user has added; view information regarding the user’s friends/connections; view information related to the user’s activities; and/or interact with others and/or software for social darts.

[0071] Advertising may be integrated into the site in any number of different ways. As one example, each or any of the pages in the web site may include banner advertisements. Alternatively, video advertisements may be played, and/or be inserted periodically.

[0072] The components in the web site system 410 (web server module 412, web application module 414, outgoing video module (not shown)) may be implemented across one or more computing devices (such as, for example, server computers), in any combination.

[0073] The database 416 in the web site system 410 may be or include one or more relational databases, one or more hierarchical databases, one or more object-oriented databases, one or more flat files, one or more structured files, and/or one or more other files for storing data in an organized/accessible fashion. The database 416 may be spread across any number of computer-readable storage media. The database 416 may be managed by one or more database management systems in the web site system 410, which may be based on technologies such as Microsoft SQL Server, MySQL, PostgreSQL, Oracle Relational Database Management System (RDBMS), a NoSQL database technology, and/or any other appropriate technologies and/or combinations of appropriate technologies. The database 416 in the web site system 410 may store information related to the web site provided by the web site system 410,

including but not limited to any or all information described herein as necessary to provide the features offered by the web site.

[0074] The web server module 412 implements the Hypertext Transfer Protocol (HTTP). The web server module 412 may be, for example, an Apache web server, Internet Information Services (IIS) web server, nginx web server, and/or any other appropriate web server program. The web server module 412 may communicate HyperText Markup Language (HTML) pages, handle HTTP requests, handle Simple Object Access Protocol (SOAP) requests (including SOAP requests over HTTP), and/or perform other related functionality.

[0075] The web application module 414 may be implemented using technologies such as PHP: Hypertext Preprocessor (PHP), Active Server Pages (ASP), Java Server Pages (JSP), Zend, Python, Zope, Ruby on Rails, Asynchronous JavaScript and XML (Ajax), and/or any other appropriate technology for implementing server-side web application functionality. In various implementations, the web application module 414 may be executed in an application server (not depicted in Figure 4) in the web site system 410 that interfaces with the web server module 412, and/or may be executed as one or more modules within the web server module 412 or as extensions to the web server module 412. The web pages generated by the web application module 414 (in conjunction with the web server module 412) may be defined using technologies such as HTML (including HTML5), eXtensible HyperText Markup Language (XHTML), Cascading Style Sheets, Javascript, and/or any other appropriate technology.

[0076] Alternatively or additionally, the web site system 410 may include one or more other modules (not depicted) for handling other aspects of the web site provided by the web site system 410.

[0077] The web browser module 422 in the first computing device 420 and/or the web browser module 442 in the second computing device 440 may include and/or communicate with one or more sub-modules that perform functionality such as rendering HTML, rendering raster and/or vector graphics, executing JavaScript, decoding and rendering video data, and/or other

functionality. Alternatively or additionally, the web browser module 422, 442 may implement Rich Internet Application (RIA) and/or multimedia technologies such as Adobe Flash, Microsoft Silverlight, and/or other technologies, for displaying video. The web browser module 422, 442 may implement RIA and/or multimedia technologies using one or web browser plug-in modules (such as, for example, an Adobe Flash or Microsoft Silverlight plugin), and/or using one or more sub-modules within the web browser module 422, 442 itself. The web browser module 422, 442 may display data on one or more display devices (not depicted) that are included in or connected to the first computing device 420 and/or second computing device 440, such as a liquid crystal display (LCD) display or monitor. The first computing device 420 may receive input from the user of the first computing device 420 from input devices (not depicted) that are included in or connected to the first computing device 420, such as a keyboard, a mouse, or a touch screen, and provide data that indicates the input to the web browser module 422. The second computing device 440 may receive input from the user of the second computing device 440 from input devices (not depicted) that are included in or connected to the second computing device 420, such as a keyboard, a mouse, or a touch screen, and provide data that indicates the input to the web browser module 442.

[0078] As depicted in Figure 4, the first computing device 420 and the second computing device 440 may be interconnected such as by infrared signal, NIC, or other direct communication methods.

[0079] Although the example architecture of Figure 4 shows a single computing device, this is done for convenience in description, and it should be understood that the architecture of Figure 4 in may include, mutatis mutandis, any number of computing devices with the same or similar characteristics as the described computing device.

[0080] Although the methods and features are described herein with reference to the example architecture of Figure 4, the methods and features described herein may be performed, mutatis mutandis, using any appropriate architecture and/or computing environment. Alternatively or additionally,

although examples are provided herein in terms of web pages generated by the web site system 410, it should be understood that the features described herein may also be implemented using specific-purpose client/server applications. For example, each or any of the features described herein with respect to the web pages in the interactive web site may be provided in one or more specific-purpose applications. For example, the features described herein may be implemented in mobile applications for Apple iOS, Android, or Windows Mobile platforms, and/or in client application for Windows, Linux, or other platforms, and/or any other appropriate computing platform.

[0081] For convenience in description, the modules (web server module 412, web application module 414, and web browser module 422) shown in Figure 4 are described herein as performing various actions. However, it should be understood that the actions described herein as performed by these modules are in actuality performed by hardware/circuitry (i.e., processors, network interfaces, memory devices, data storage devices, input devices, and/or display devices) in the electronic devices where the modules are stored/executed.

[0082] A method of interacting with a video game is also disclosed. This method 500 is illustrated in Figure 5. Method 500 includes the steps of providing a target on a first computing device at step 510. Providing a target may include displaying a target on the screen of the first computing device as a display. Such a target may take the form of a dartboard with the bullseye and traditional dartboard configuration described herein.

[0083] At step 520, an interaction between the first and second computing device is initiated. This may include a user sliding along the surface of the second device to activate the system to the user's shot. This may further include angling the device in pitch and yaw as described hereinabove.

[0084] Responsive to the initiation, a marker is provided on the target at step 530. Based on the position of the second computing device, the marker may be displayed on the target. By changing the angle of the second device, the marker may be moved along the target to allow a user to aim the dart.

[0085] At step 540, a simulated throw may be initiated from the second device to the first device to strike the target. This throw may be initiated by swiping a finger across the surface of the computing device to initiate the simulated flight of the dart to the target. Based on the speed of the swipe across the surface, various speeds may be imparted on the dart. Where the dart strikes the target may be determined by the speed of the swipe and angles of the device while or just before the dart is “thrown.”

[0086] As used herein, the term “processor” broadly refers to and is not limited to a single- or multi-core central processing unit (CPU), a special purpose processor, a conventional processor, a Graphics Processing Unit (GPU), a digital signal processor (DSP), a plurality of microprocessors, one or more microprocessors in association with a DSP core, a controller, a microcontroller, one or more Application Specific Integrated Circuits (ASICs), one or more Field Programmable Gate Array (FPGA) circuits, any other type of integrated circuit (IC), a system-on-a-chip (SOC), and/or a state machine.

[0087] As used to herein, the term “computer-readable medium” broadly refers to and is not limited to a register, a cache memory, a ROM, a semiconductor memory device (such as a D-RAM, S-RAM, or other RAM), a magnetic medium such as a flash memory, a hard disk, a magneto-optical medium, an optical medium such as a CD-ROM, a DVDs, or BD, or other type of device for electronic data storage.

[0088] Although features are described herein as being performed in a tablet computing device, the features described herein may also be implemented, mutatis mutandis, on a desktop computer, a laptop computer, a netbook, a cellular phone, a personal digital assistant (PDA), or any other appropriate type of tablet computing device or data processing device.

[0089] Although features and elements are described above in particular combinations, each feature or element can be used alone or in any combination with or without the other features and elements. For example, each feature or element as described above may be used alone without the other features and elements or in various combinations with or without other features and elements.

Sub-elements of the methods and features described above may be performed in any arbitrary order (including concurrently), in any combination or sub-combination.

[0090] Although the invention has been described and pictured in an exemplary form with a certain degree of particularity, it is understood that the present disclosure of the exemplary form has been made by way of example, and that numerous changes in the details of construction and combination and arrangement of parts and steps may be made without departing from the spirit and scope of the invention as set forth in the claims hereinafter.

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CLAIMS

What is claimed is:

1. A method for implementing a video game, the method implemented in a computing device that includes a processor and memory device, the method comprising:
 - providing a target on a first computing device;
 - initiating an interaction between the first computing device and a second computing device, the second computing device providing the information to simulate the flight of a dart to the first computing device;
 - responsive to the interaction, providing a marker on the target, which marker corresponds to the location to be struck by the dart as calculated from the information provided to the first computing device from the second computing device based on the position and tilt of the second computer device; and
 - initiating a throw of the dart from the second computing device to the first computing device to strike the target, the initiating including transferring information from the second computing device to the first computing device that enables the first computing device to calculate where the simulated dart strikes the target.
2. The method of claim 1 wherein providing a target comprises displaying a dartboard.
3. The method of claim 1 further comprises providing a terrain over which the dart traverses during flight.
4. The method of claim 1 wherein the initiating an interaction comprises at least one of swiping the screen of the second computing device and depressing a button on the second computing device.
5. The method of claim 1 wherein providing a marker includes displaying a plus sign on the target.

6. The method of claim 1 wherein the position of the marker is calculated using the inter-relation of the second computing device to the first computing device and is generally based on where the second computing device is pointing.

7. The method of claim 1 wherein initiating the throw includes swiping the dart from the screen.

8. The method of claim 1 wherein initiating the throw occurs by flicking the dart toward the target.

9. The method of claim 1 wherein initiating the throw occurs by pulling the dart back and releasing the dart in the direction of the target.

10. The method of claim 1 wherein initiating the throw imparts speed on the dart, which speed determines whether the dart strikes the target on the marker.

11. The method of claim 1 wherein the dart striking the target provides a score.

12. The method of claim 1 wherein the first computing device is a tablet computing device that provides at least one of a target, terrains and conditions over which the simulated dart is simulated to traverse.

13. The method of claim 1 wherein the second computing device is a smartphone and wherein aiming of the dart is performed by tilting the phone and by the thumb initiation of the dart on the face of the device.

14. A system for implementing a video game of darts on a computing device, the system comprising:

a processor for displaying a target on the screen of the computing device;
a communication interface for receiving information from other computing devices relative to the placement of a marker on a target and relative to the speed and angle of a dart thrown at the target;
the processor calculating from the received information the location of the marker and displaying the marker on the target; and
once the throw of the dart is initiated, the communications interface receives the speed of the throw, and the processor calculates the position where the dart strikes the target based on the speed of the throw and the placement of the marker.

15. The system of claim 14 wherein displaying a target comprises displaying a dartboard.

16. The system of claim 14 further comprises the processor providing a terrain over which the dart traverses during flight.

17. The system of claim 14 wherein displaying a marker includes displaying a plus sign on the target.

18. The system of claim 14 wherein the position of the marker is calculated from the received information which represents the inter-relation of a second computing device to the first computing device and is generally based on where the second computing device is pointing.

19. The system of claim 14 wherein the dart striking the target provides a score.

20. The system of claim 14 wherein the first computing device is a tablet computing device that provides at least one of a target, terrains and conditions for throwing the dart.

21. A non-transitory computer readable medium having processor-executable instructions stored thereon which, when executed by at least one processor, will cause the at least processor to perform a method for implementing a video game, the method comprising:

- providing a target on a first computing device;

- initiating an interaction between the first computing device and a second computing device, the second computing device providing the information to simulate the flight of a dart to the first computing device;

- responsive to the interaction, providing a marker on the target, which marker corresponds to the location to be struck by the dart as calculated from the information provided to the first computing device from the second computing device based on the position and tilt of the second computer device; and

- initiating a throw of the dart from the second computing device to the first computing device to strike the target, the initiating including transferring information from the second computing device to the first computing device that enables the first computing device to calculate where the simulated dart strikes the target.

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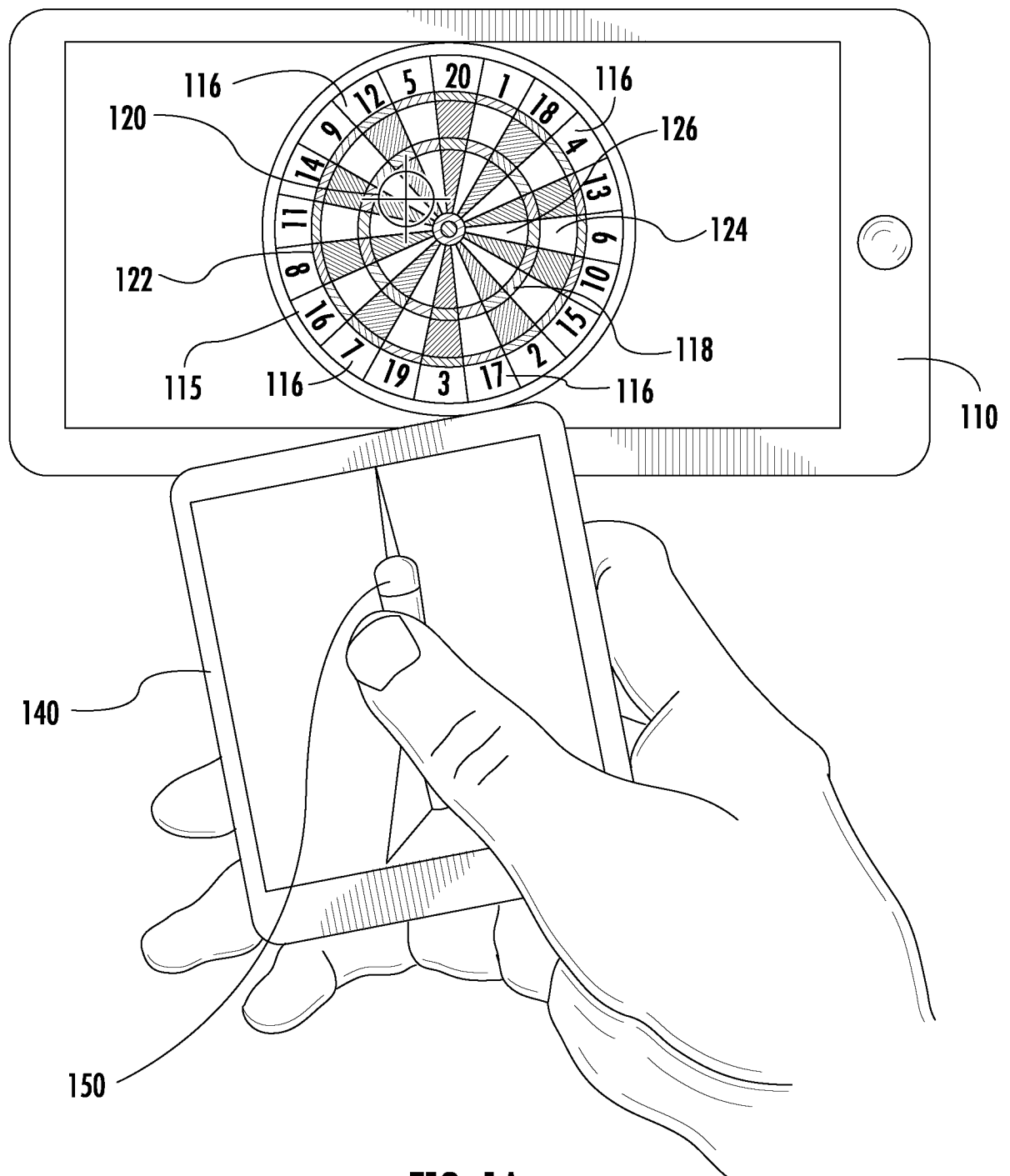


FIG. 1A

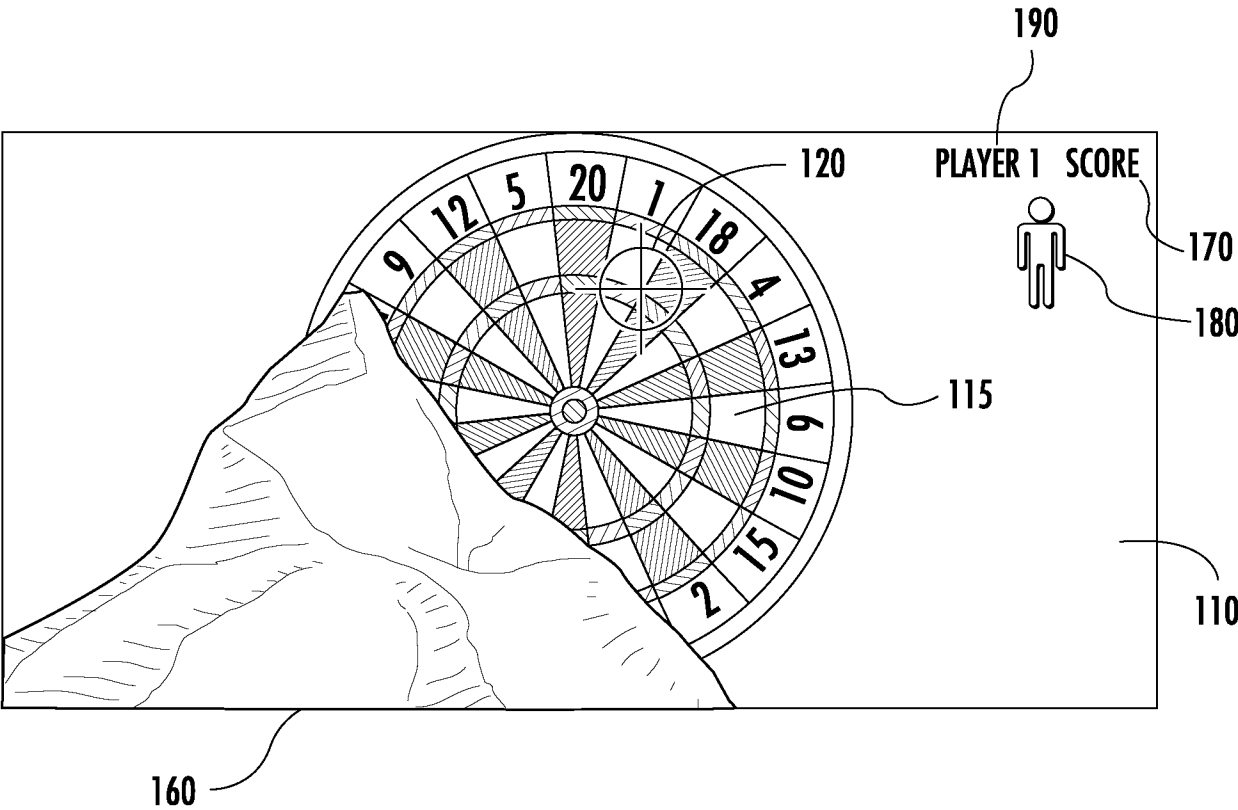


FIG. 1B

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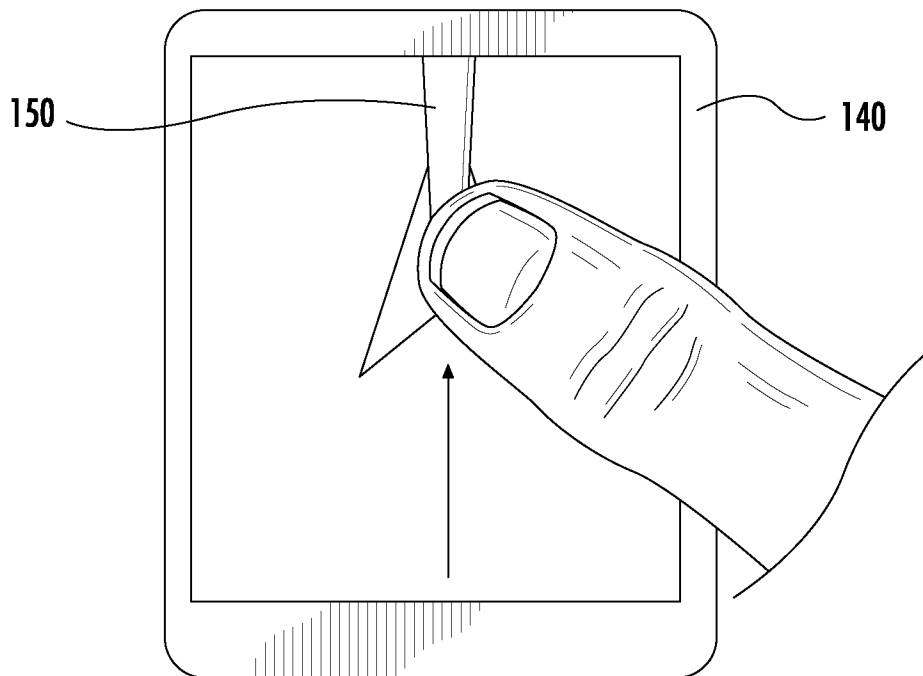
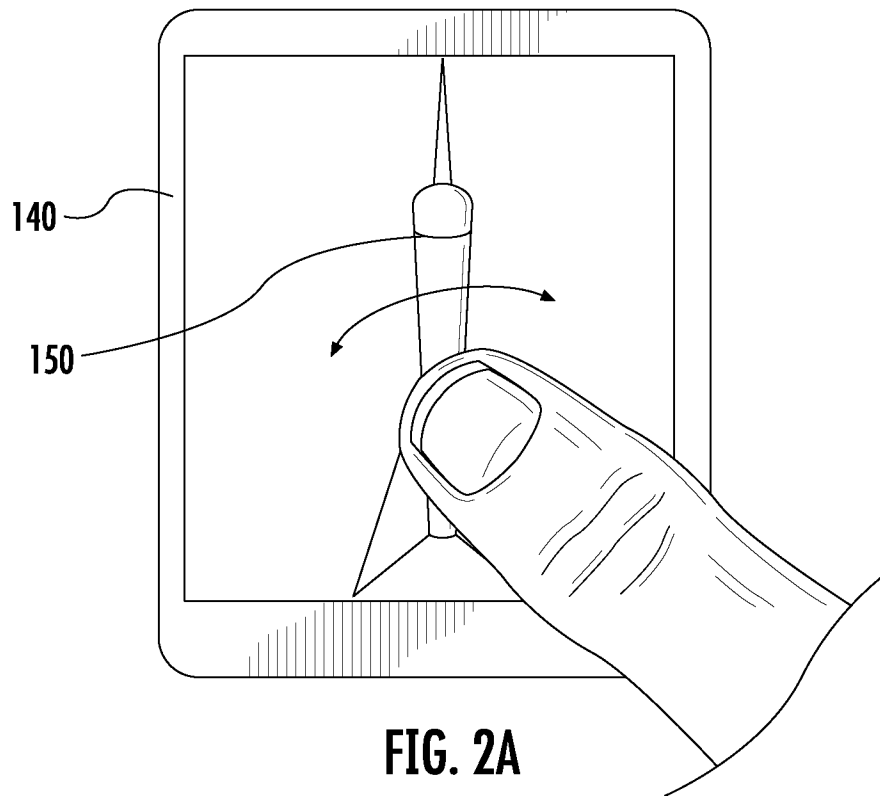


FIG. 2D

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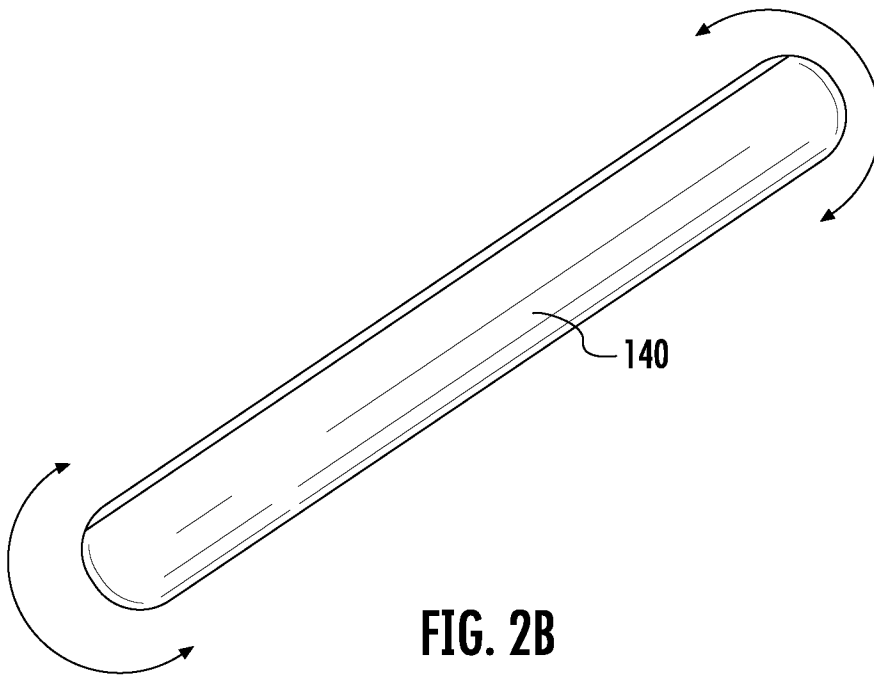


FIG. 2B

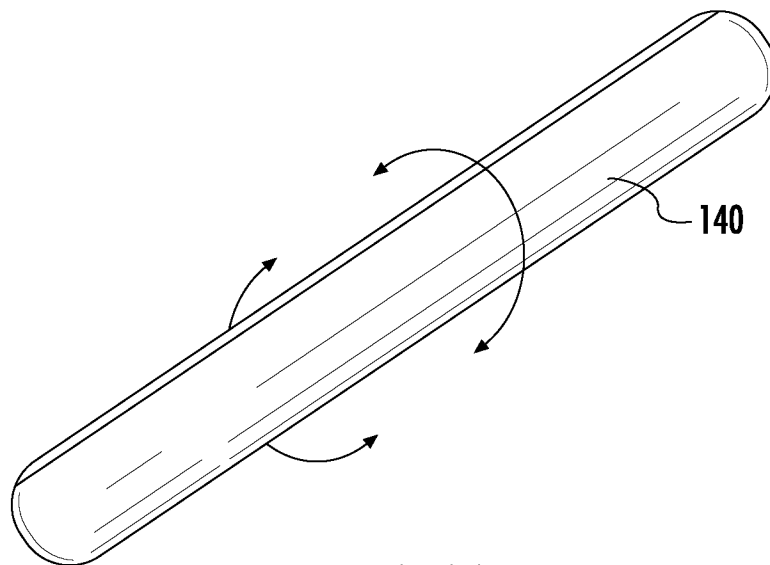


FIG. 2C

300

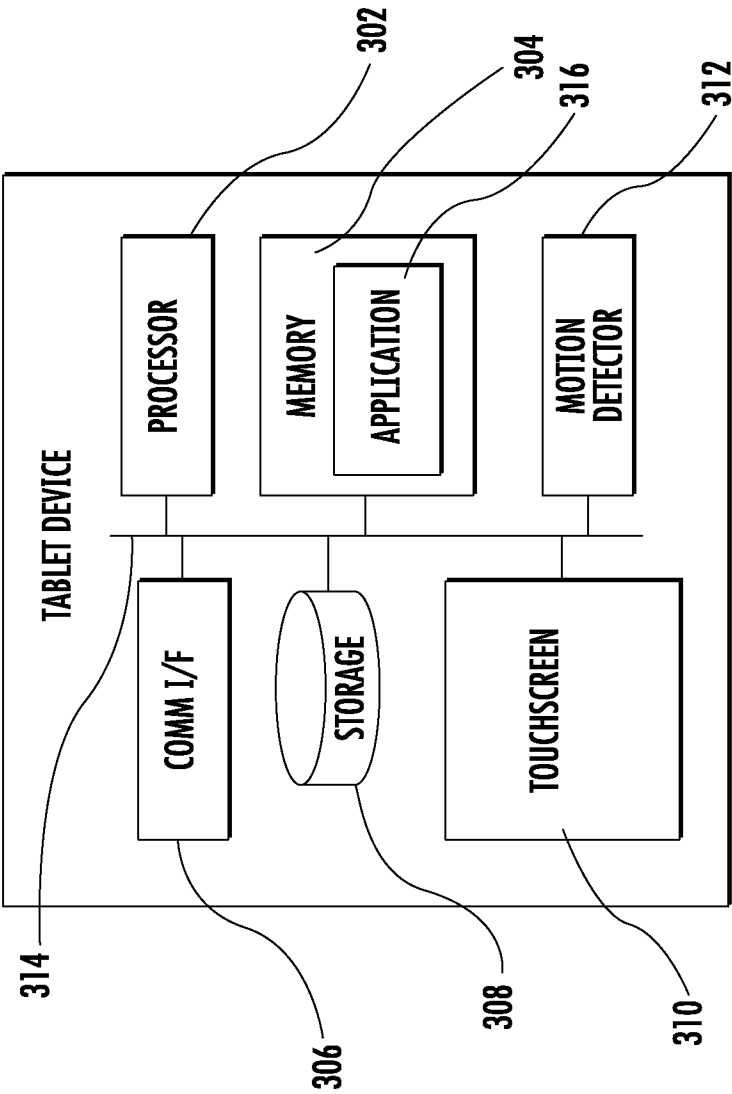


FIG. 3

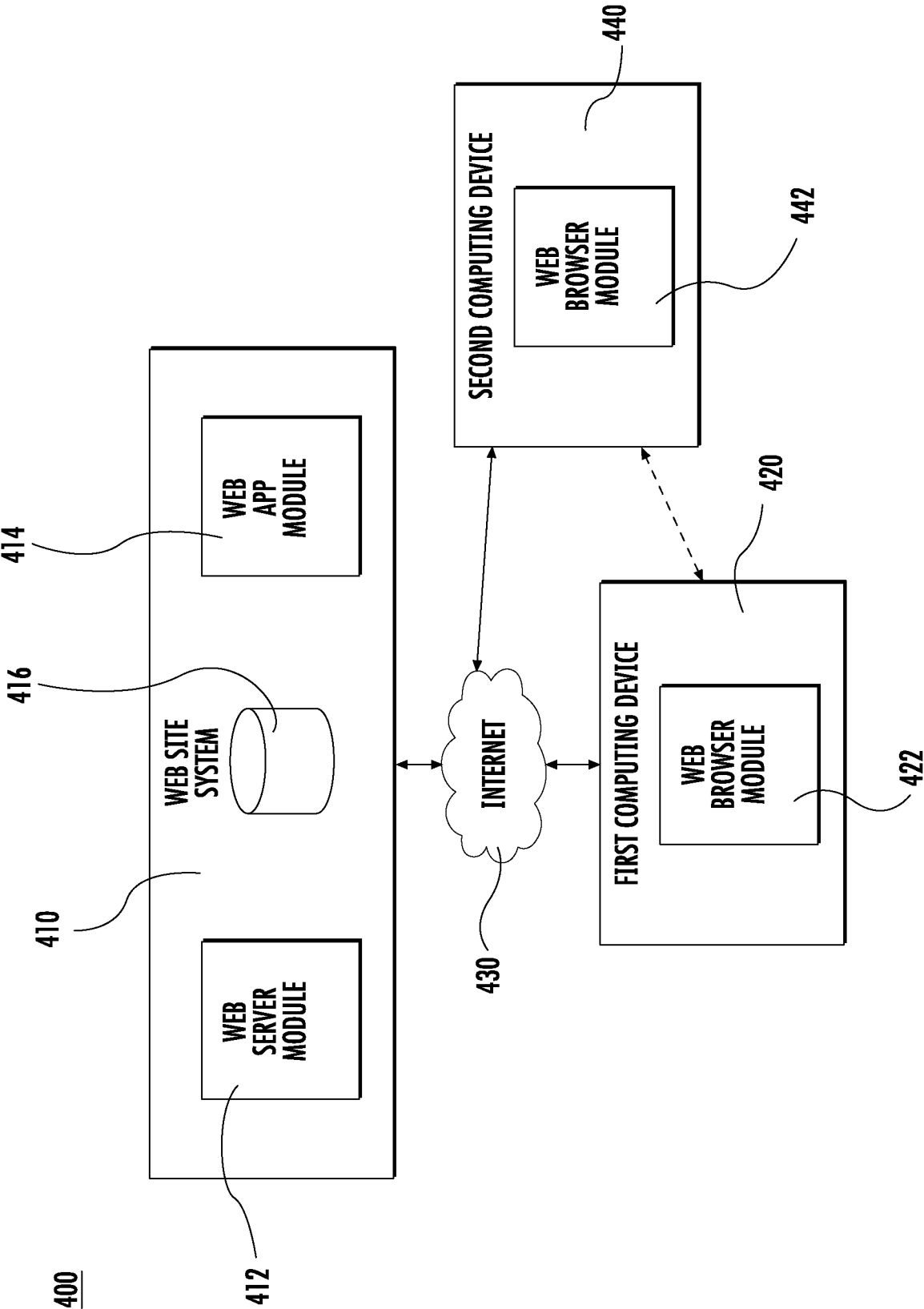


FIG. 4

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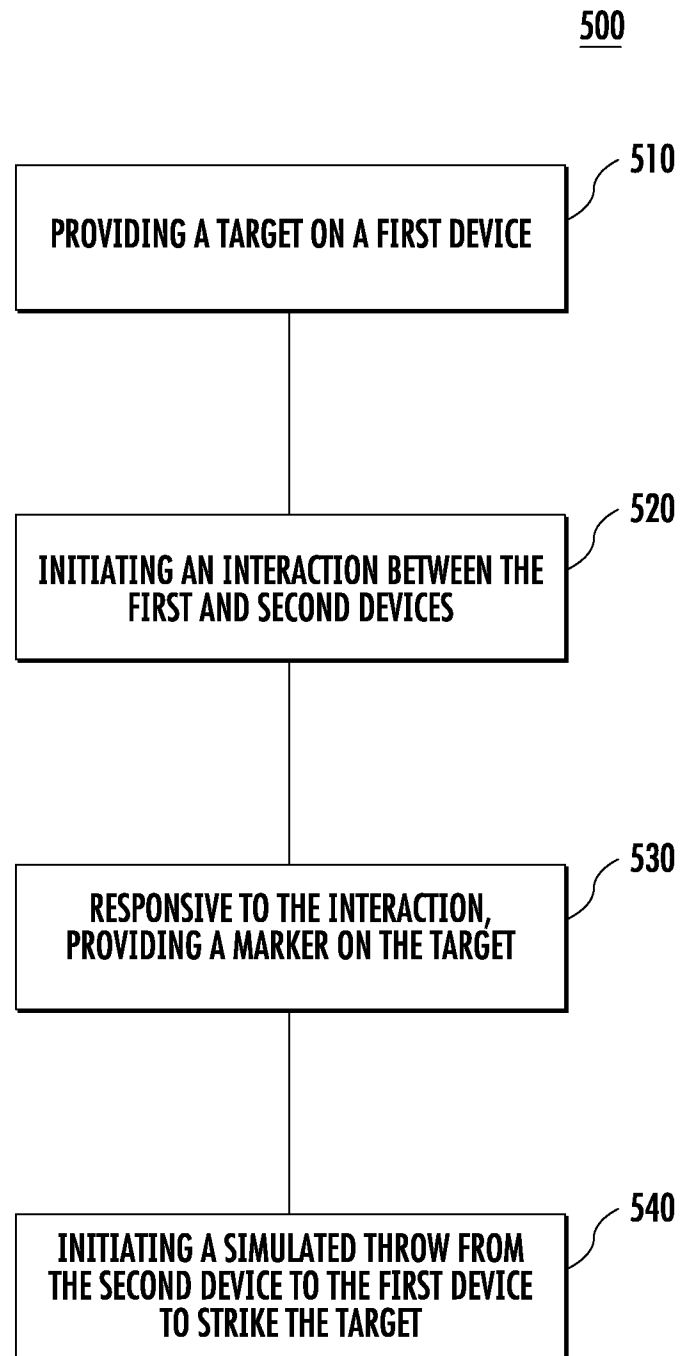


FIG. 5

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2013/026116

A. CLASSIFICATION OF SUBJECT MATTER
INV. A63F13/06
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A63F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 2 392 389 A1 (NINTENDO CO LTD [JP]) 7 December 2011 (2011-12-07) paragraphs [0008] - [0010], [0029] - [0030], [0122] - [0124], [0134], [0141], [0187], [0194] - [0200] - paragraphs [0201] - [0208], [0219] - [0219], [0221] - [0224]; figures 1,8-10,14,15,19 -----	1-21

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

8 April 2013

Date of mailing of the international search report

18/04/2013

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Ruf, Andreas

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2013/026116

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