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(54) **QUICK PASSING FEATURE FOR SPORTS VIDEO GAMES**

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(57) **ABSTRACT**

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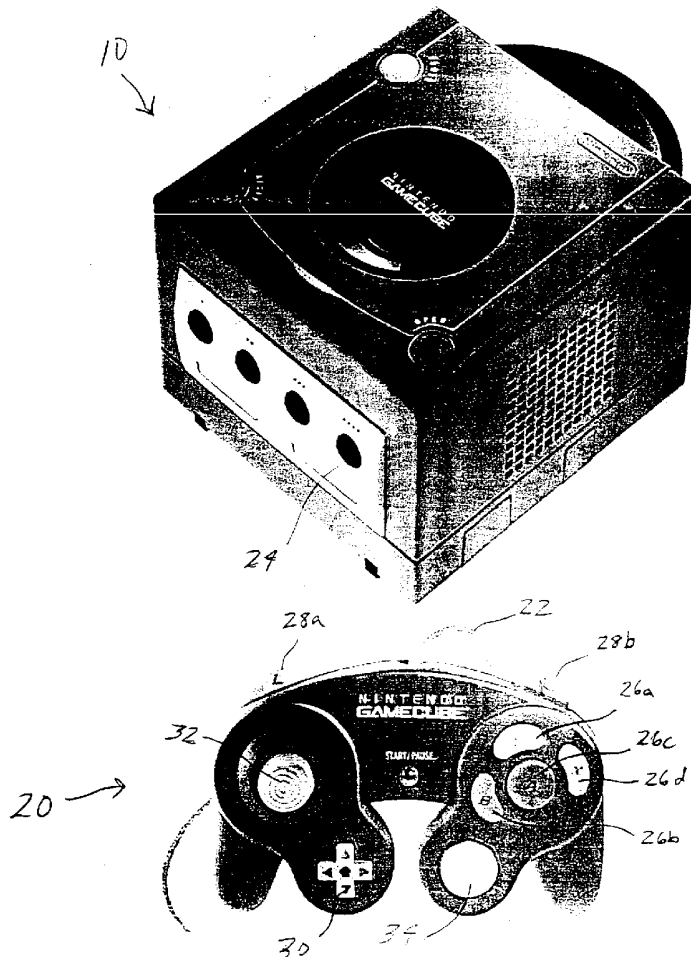
An improved passing feature for sports videogames that enables passing of, for example, a virtual ball, in a direction that is different than the direction in which the virtual player is moving on the virtual playing field. In accordance with the instant invention, the moving direction for a virtual player and the passing direction for that player are made independent, thereby providing more fluid passing and greatly enhancing gameplay. The passing feature can be implemented on a game controller having one or two analog joysticks.

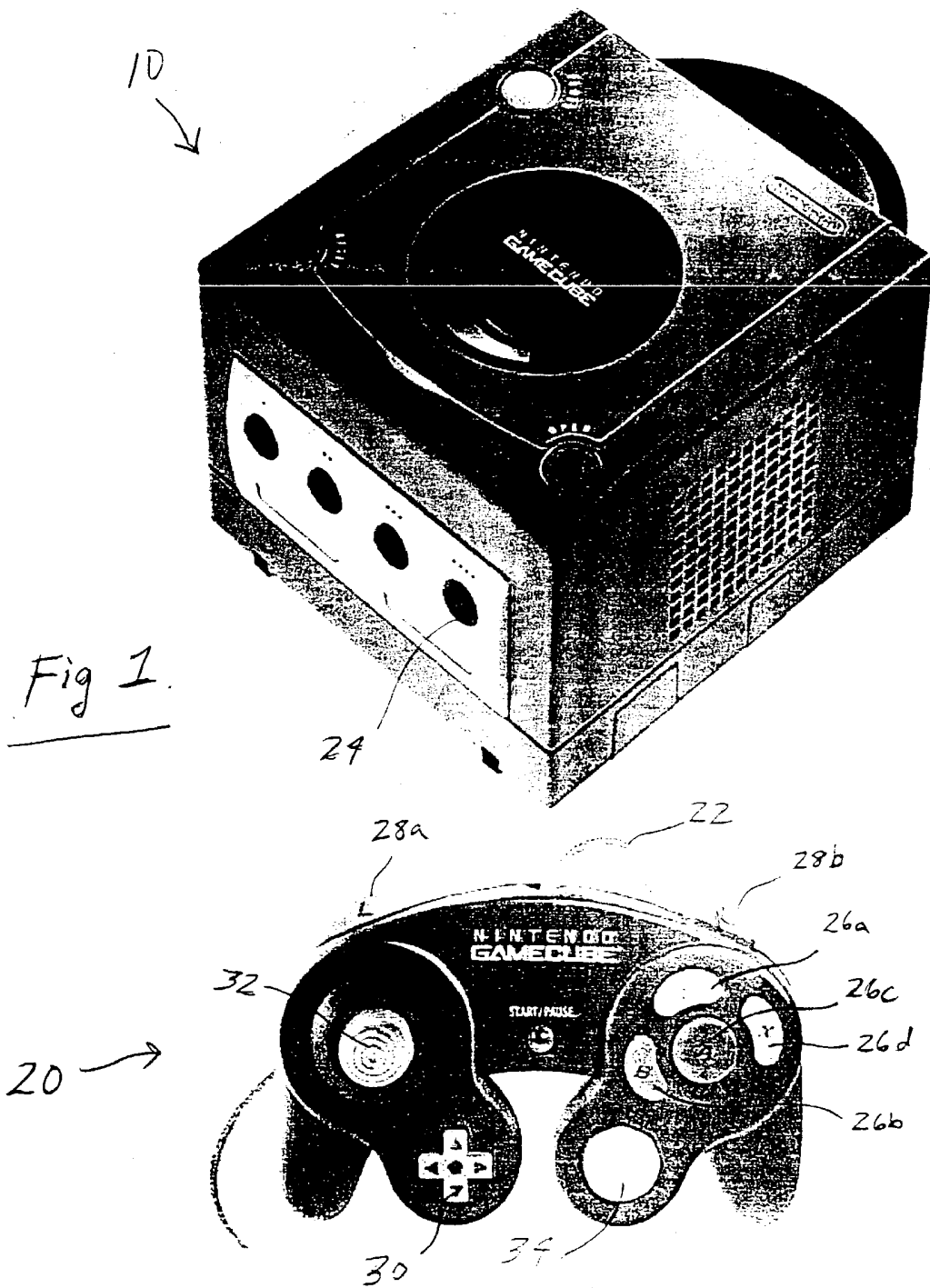
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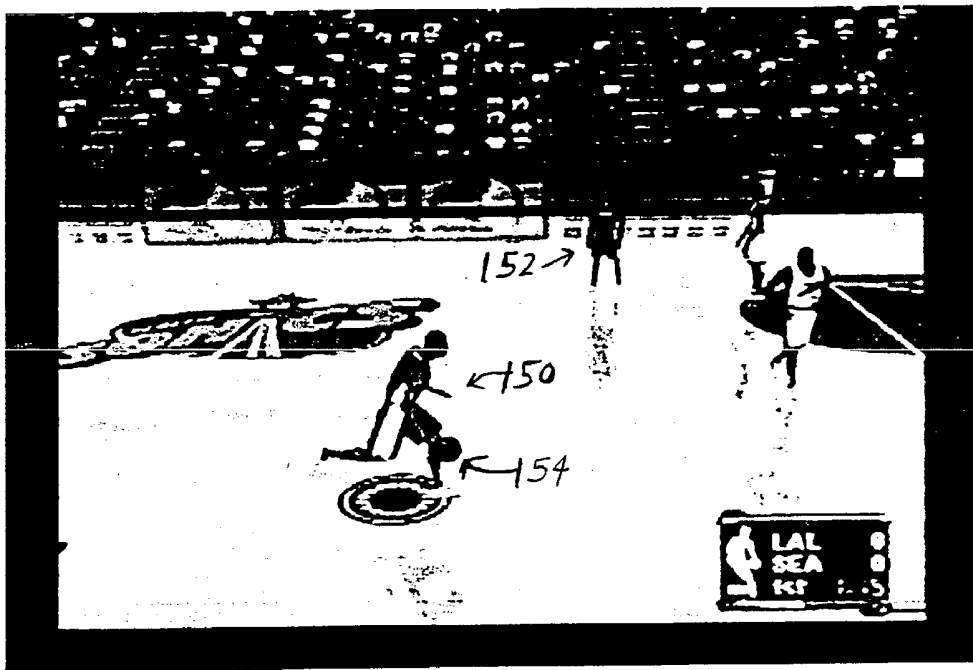


Fig. 2

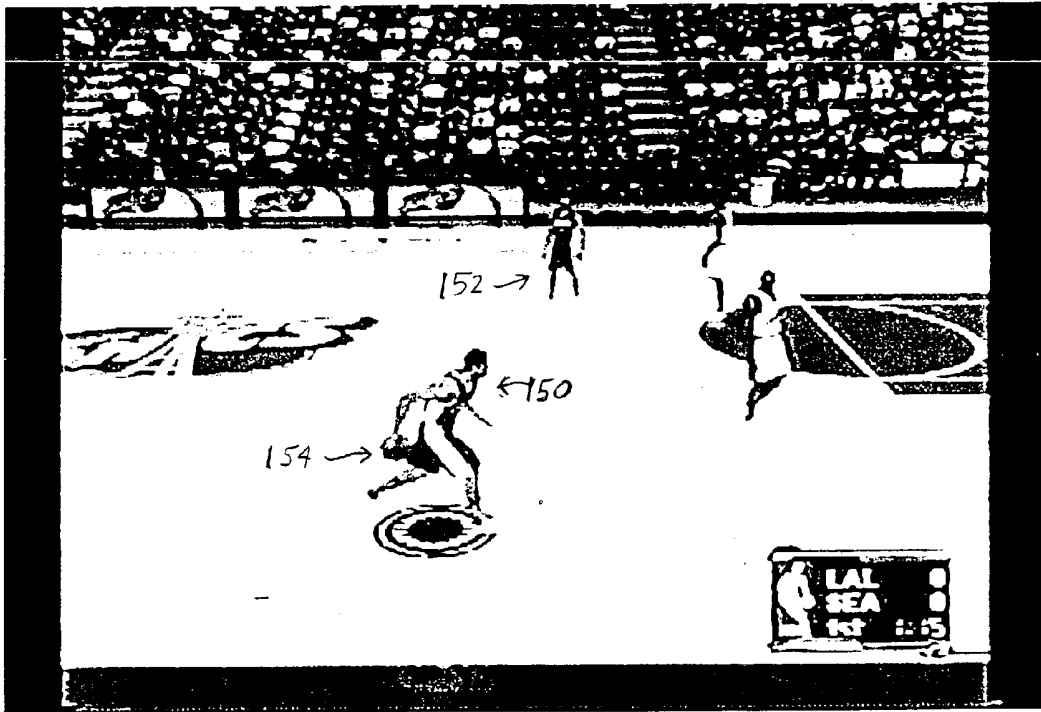


Fig. 3

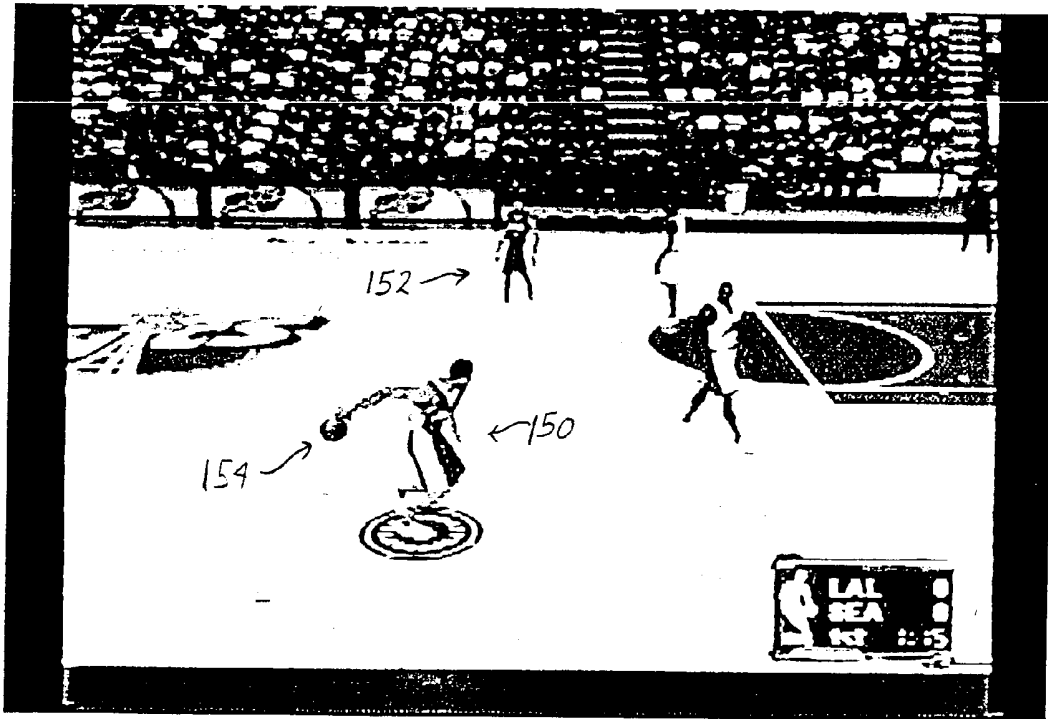


Fig. 4

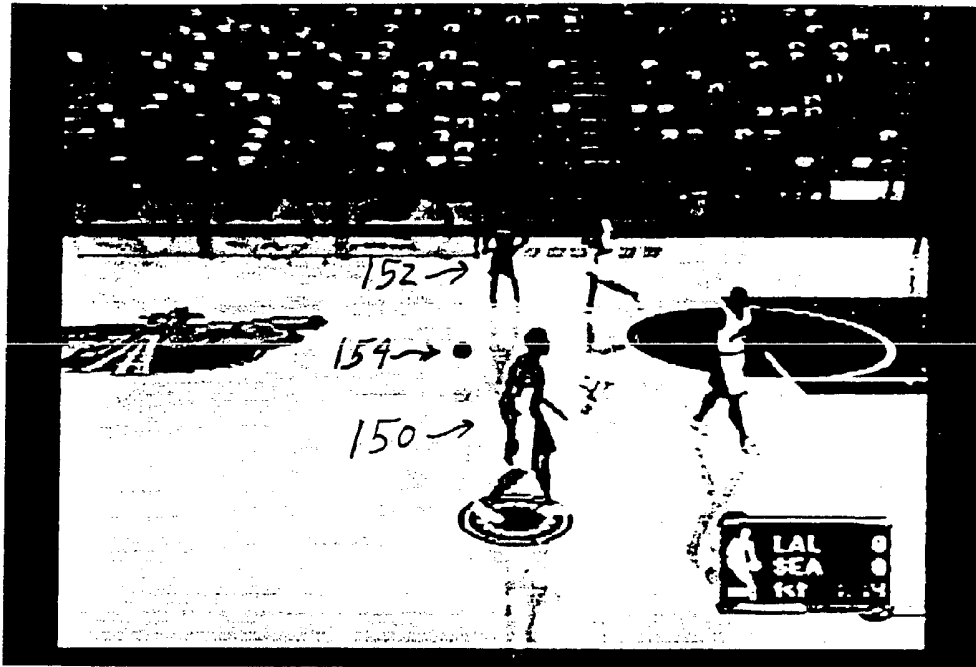


Fig. 5

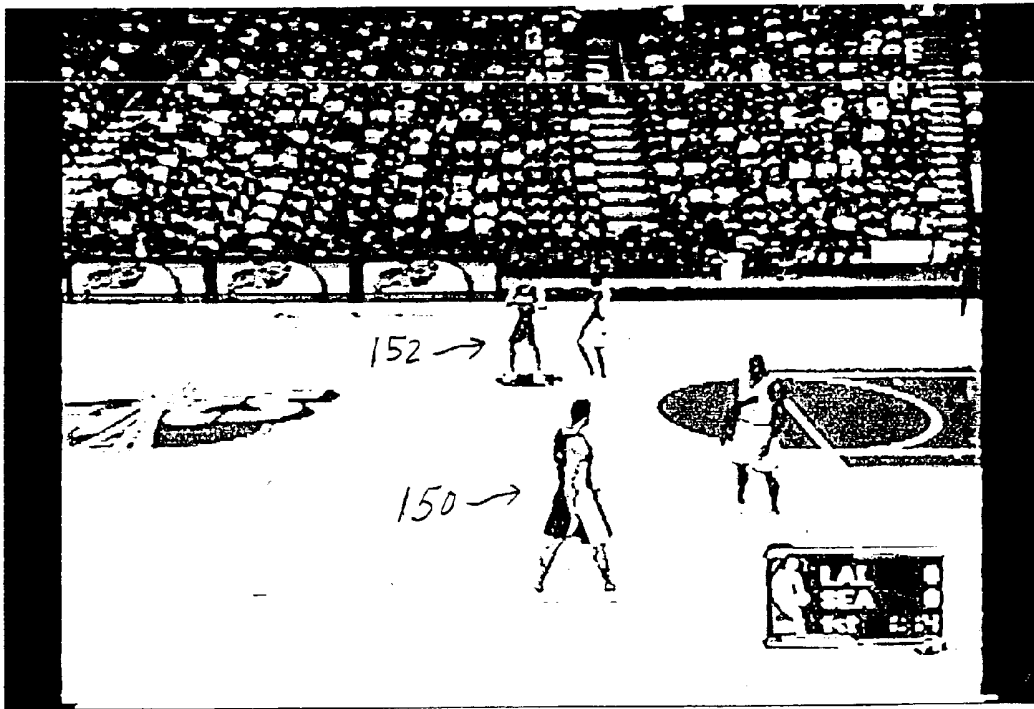


Fig. 6

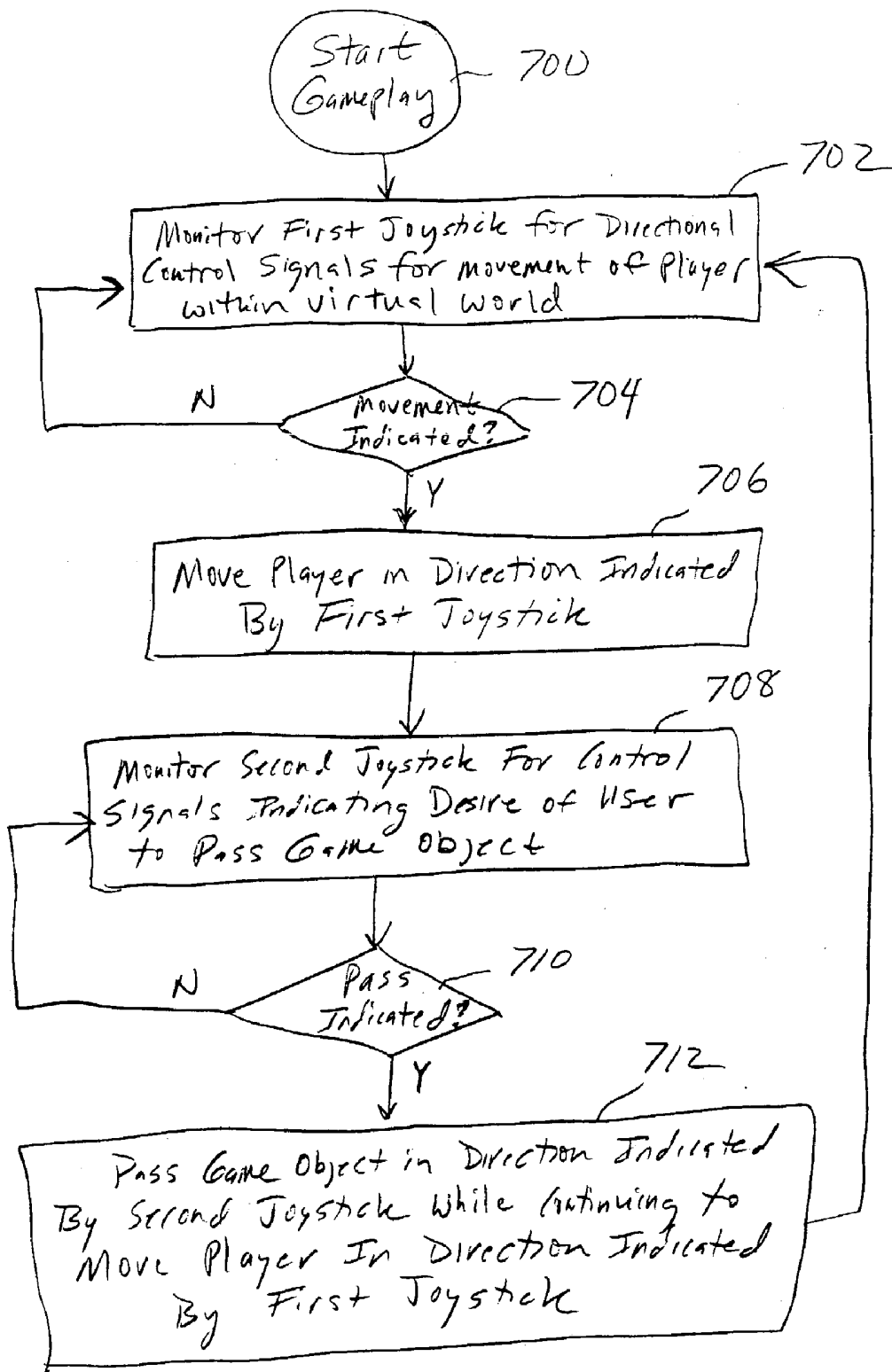


Fig. 7

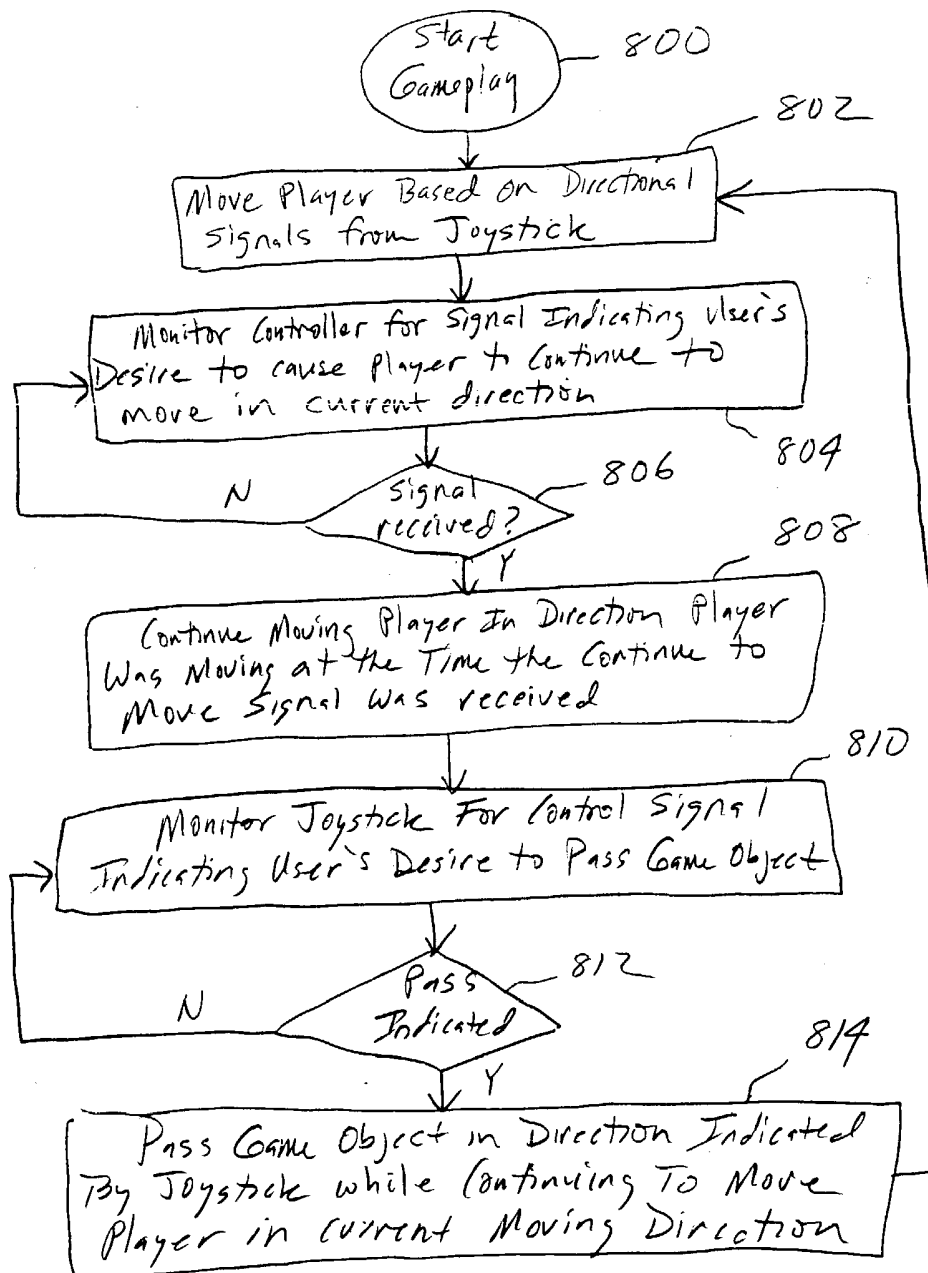
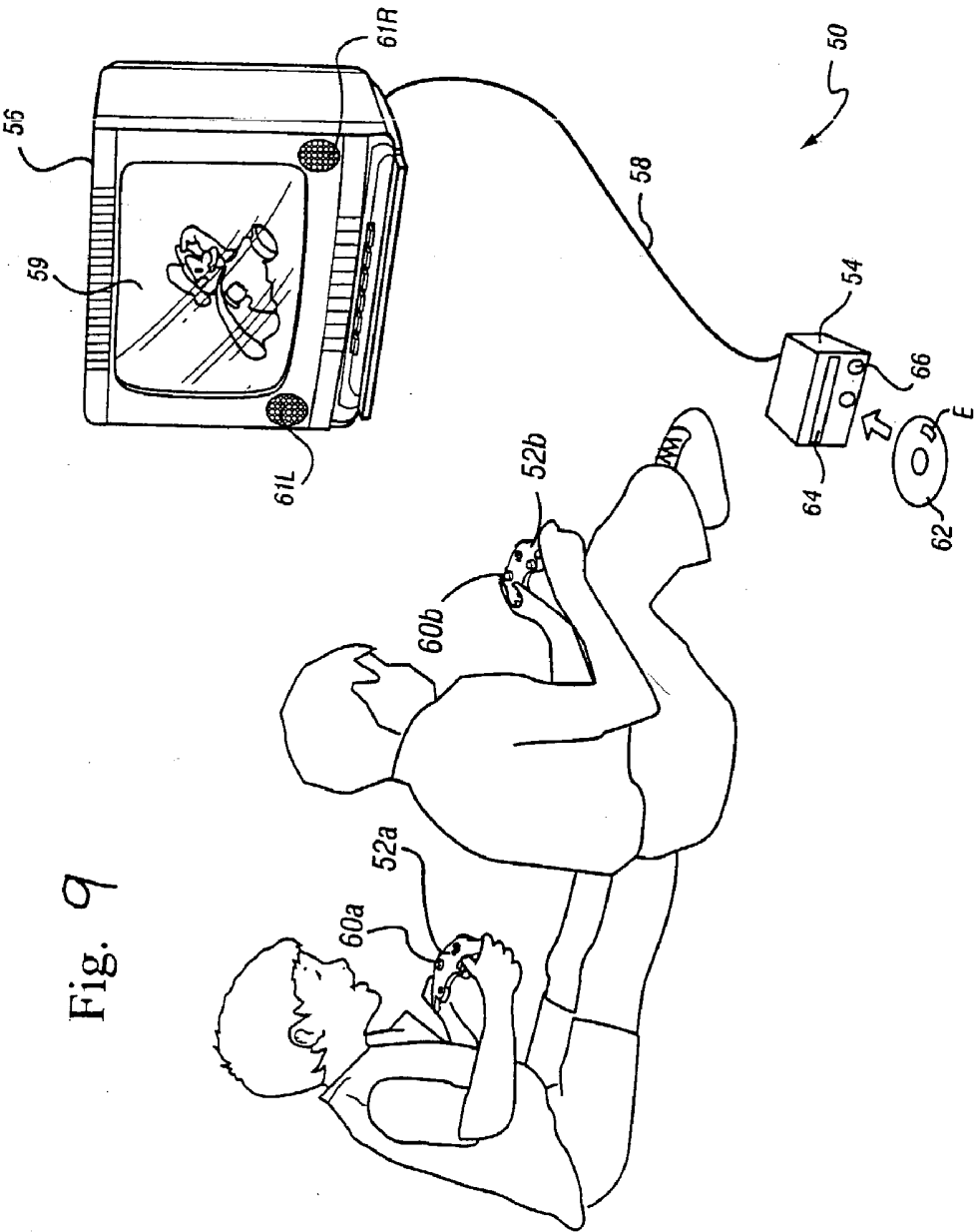


Fig. 8

Fig. 9



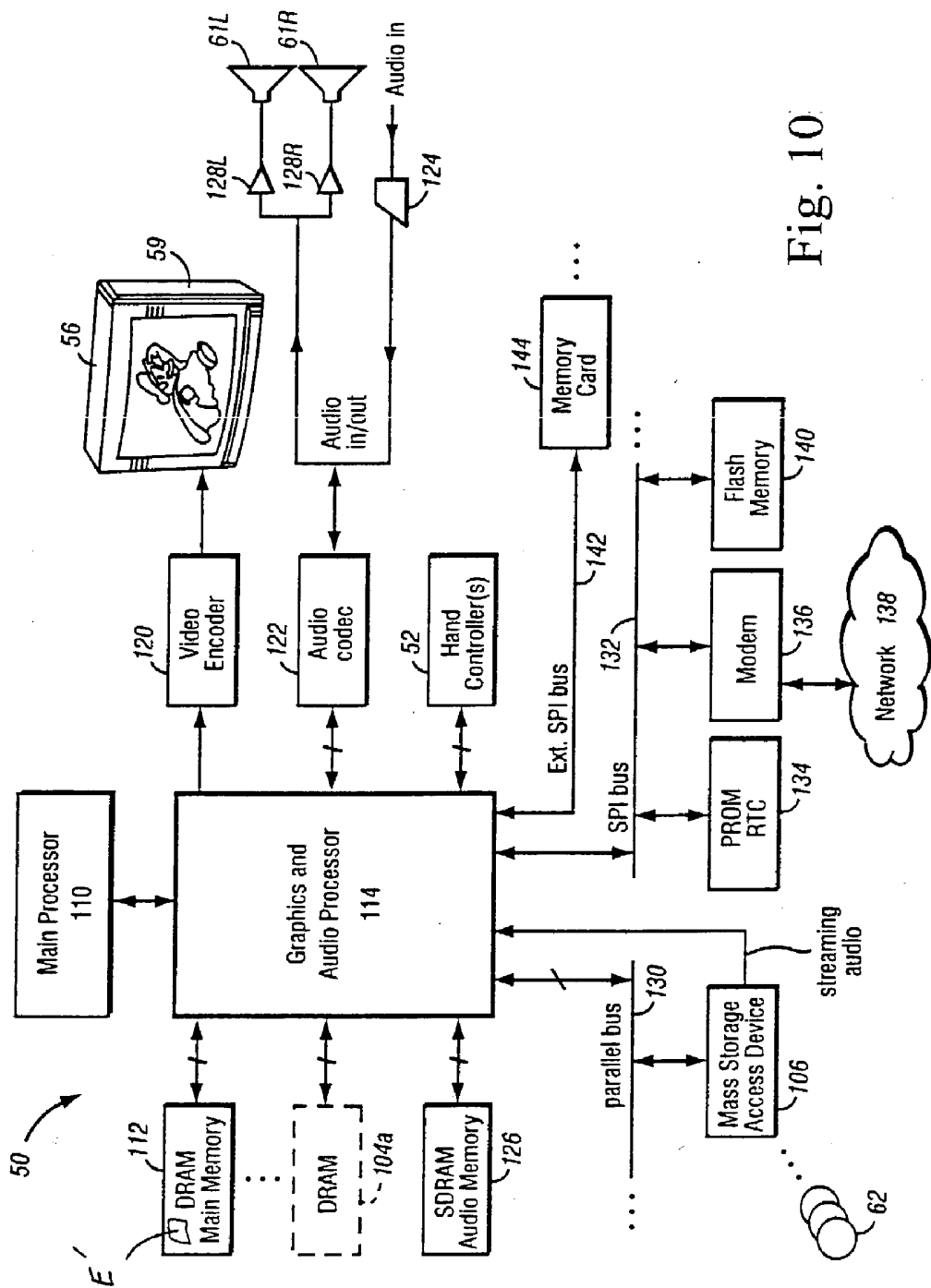


Fig. 10

QUICK PASSING FEATURE FOR SPORTS VIDEO GAMES

RELATED APPLICATION

[0001] This application claims the benefit of U.S. provisional application No. 60/290,644 filed May 15, 2001 and entitled "Quick Passing Feature For Sports Video Games", the disclosure of which is incorporated herein in its entirety.

FIELD OF THE INVENTIONS

[0002] The instant invention relates to the field of video games and, more particularly, to an improved passing feature for sports video games and the like. The invention provides an improved passing feature for passing a virtual ball or other game object in a quick, effective and convenient manner from one virtual game player to another game player during gameplay.

[0003] In accordance with an important feature of the instant invention, the improved passing feature enables passing of, for example, a virtual ball, in a direction that is different than the direction in which the virtual player is moving on the virtual playing field. In other words, in accordance with the instant invention, the moving direction for a virtual player and the passing direction for that player are made independent, thereby providing more fluid passing and greatly enhancing gameplay.

BACKGROUND OF THE INVENTION

[0004] Sports videogames have been very successful and popular. There are a variety of sports games that have been provided for use on videogame consoles, such as Nintendo's N64, NINTENDO GAMECUBE, Sega's Dreamcast, and Sony's Playstation2 to name just a few. Numerous basketball, football, soccer, baseball and hockey games, as well as many other sports games, have been created for playing on videogame consoles. Due mainly to the major advancements in graphics hardware over the years, these sports videogames have become very realistic and provide users of the games with an exciting and enjoyable experience that closely simulates real sports competition. The software behind these videogames has also become very sophisticated and facilitates many elements of real sports competition in order to provide the user with an experience that simulates real sports play as close as possible. For example, in basketball video games, the player is provided with the ability to dribble, pass, shoot, block and perform many other simulated acts that a real basketball player would perform during an actual game. A few better known basketball videogames include Nintendo's NBA Courtside I and II, NBA Live 2000-2002, Midway's NBA Showtime, Acclaim's NBA Jam, as well as college games (NCAA) provided by Electronic Arts and others (just to name a few).

[0005] While prior videogames have very realistic gameplay, the industry is constantly striving to improve the games and provide even greater realistic and exciting experiences for the player. Constant improvements are needed in order to continue to satisfy the every increasing demand for high quality and realistic sports video games. One important feature of sport videogames is the ability to pass a game object, such as a basketball, baseball, hockey puck, football or the like, from one player to another in an accurate and convenient manner. Every sports videogame has included

some type of functionality for enabling the user to pass a ball (or other game object) during the game using some type of game controller that is typically held by the user while playing the game.

[0006] The most common and currently popular method for passing involves using a passing button on the game controller to indicate to the game an intention of the user to pass the ball. In other words, one of the buttons on the game controller is designated as a pass button. Such game controllers also typically include an analog stick or "joystick" that is used during gameplay to move the active player (typically the player having the ball or other passable object) around the virtual playing field defined by the video game. The joystick typically can be moved in a 360 degree arc to enable the user to move and/or rotate the active player within the game space, such as a virtual basketball court. Joysticks are typically analog control devices as opposed to digital devices such as a button. Thus, the analog stick can define an entire range of control for the game depending on the amount that the joystick is rotated relative to an initial or zero position. Analog sticks can also be used in a digital mode, where only on/off states are detected, by, for example, causing the software to only respond to a full rotation of the joystick (or some other defined amount of rotation). Other buttons or control elements, such as joypads, are also generally provided on the game controller for controlling all other available aspects of the game.

[0007] In order to enable fast and realistic action in sports video games, the control elements (e.g., buttons, joystick(s) etc.) on the game controller must be positioned on the controller and designed to operate in an easily, effective and comfortable manner. The ease at which a user can accurately manipulate the game player to perform in the game as desired using the game controller is an important factor in the enjoyment and success of a sports videogame. This is due to the fact that sports videogames have fast action that require quick and accurate input from the user for exciting competition and ultimate success against an opponent in the game.

[0008] A variety of controllers have been provided in the past for use by the player to manipulate the action during game play. Such controllers generally have several digital buttons and an analog joystick for use by the user during the game. More recently, game controllers, such as the controller for the Sony Playstation2 and for the NINTENDO GAMECUBE, have incorporated a second analog joystick.

[0009] Passing of the ball or other game object is obviously a very commonly used and integral part of virtually all sports videogames. As indicated above, passing is typically done using a passing button on the controller. Pressing the passing button typically places the user in a passing mode wherein movement of the joystick indicates a direction for a pass of the ball or other game object. In other words, pressing of the pass button changes the function of the joystick from a moving mode to a passing mode. Before pressing the pass button the joystick is used to move the player. However, once the passing button is pressed, the player typically stops and then faces and passes the ball in the direction indicated by the joystick at the time or shortly after the passing button is pressed. While this passing technique has been very popular in videogames, one disadvantage is that it does not enable the player to be moving

while passing. More particularly, such prior art passing techniques do not enable the player to be moving in one direction and pass in another and different direction. This limitation reduces the realism and enjoyment of sports videogames.

[0010] Another method of passing a ball or other game object used in prior sports games is called "icon passing". In icon passing, a button on the controller is typically used to enter icon passing mode, which is different than the passing mode described above. Once in icon passing mode, small icons are shown on the display screen above each of the players that the user can pass to. For example, in basketball the icon passing button causes small icons to appear above each of the four players on offense that do not have the ball. The software associates each icon with a particular button on the controller, respectively. The user can then select one of the defined buttons on the controller to indicate a specific player that the user desires to pass to. Icon passing can be clumsy, slow and inconvenient in operation, and is often not preferred by players over the regular passing method explained above, particularly by players who enjoy the fast action provided by such games.

[0011] Another problem with icon passing is that, during icon passing mode, several of the buttons are unavailable for other control features. Thus, icon passing "hogs" the buttons on the controller and interferes with other aspects of gameplay. Moreover, switching between regular passing mode and icon passing mode can be distracting and inconvenient for the user. It also is too slow to use in, for example, a fast break situation in a basketball game. Also, because players move around the court or playing field, the player on the right side does not always correspond to a button on the right side of the controller, thereby further complicating icon passing for the user. As a result of these disadvantages, many users do not even use the icon passing feature, electing instead to use the regular passing feature to accomplish passes during a game (i.e., they use the regular pass button to exit moving mode (i.e. stop) and enter passing mode, and use the joystick to indicate the direction of the pass (which corresponds to the direction that the player is facing at the time of the pass). Many prior sports videogames enable the user to selectively use either regular passing or icon passing.

[0012] As explained above, regular passing has the disadvantage of not enabling the player to move and pass at the same time and in different directions. For example, the regular passing method does not enable the player to be moving forward and pass the ball to another player behind the player. As explained above, this is due to the fact that pressing the regular passing button causes the player to exit the moving mode (where the user can move the player by operation of the joystick), and make a pass by using the directional signal from the joystick (which is the direction that the player is facing at the time of the pass). As also explained above, icon passing also has significant disadvantages, even though it does enable the user to indicate a passing direction that is different from the direction that the player is facing (by selecting a player to pass to based on the icons).

[0013] Regardless of the changes and improvements in the configuration and operation of game controllers, these two passing methods (regular and icon) have been consistently used in the most popular sports video games. Both single

and dual analog joystick controllers have used these same two passing methods. Thus, regardless of the fact that controllers, like Sony's Playstation2 controller, has two analog joysticks, sports videogames have still been designed in accordance with the two passing methods described above. Thus, while controllers have improved and added additional analog sticks, passing features in sports games have remained substantially the same with respect to the inability to quickly and easily pass in one direction while moving in another direction.

[0014] Not being able to pass in one direction while moving in another direction without the use of icon passing, makes a sports game less realistic, due to the fact that real basketball players frequently pass when they are moving and, more importantly, frequently pass in one direction while moving in another direction. In fact, this skill is imperative to a good player in real basketball in order to enable the player to successfully pass the ball without having it stolen by the other team. This limitation on passing also reduces the realism and enjoyment of sports videogames. For example, when using regular passing in a basketball videogame, if a player with the ball is running from the right side to the left side of the baseline and wants to pass the ball, the ball can only be passed to a player in front of the player (plus or minus some correction angle, like 45 degrees, that the game considers to be in the direction that the player is facing). To pass in another direction without using icon passing, such as behind the player when moving across the baseline, the user would have to direct the player towards the intended player (turn the player around in this example) and then use the pass button in order to make this play. Thus, in regular passing (the passing mode most frequently used by players of such games), the player must be facing (e.g., plus or minus 45 degrees) the player that he intends to pass to at the time of the pass. Not only does this technique tend to "telegraph" the pass to the opposing team, it also reduces the realism and corresponding excitement of the game.

[0015] For at least the foregoing reasons, further improvements in passing techniques for sports video games are needed. The instant invention addressed this need by providing an improved passing feature for sports videogames which, in the preferred embodiment, uses two analog joysticks in a manner that enables the player to easily and conveniently pass in one direction while moving in another direction and without the use of the icon passing method. In accordance with the preferred embodiment of the invention, a first analog joystick is used to control the directional movement of the player while a second analog joystick is used to pass the ball. An important advantage of the invention is that it makes the moving direction and the passing direction independent from one another. In this way, the user can use the first joystick to run or dribble in a first direction and, at the same time, use the second joystick to pass the ball in a different direction. Thus, referring to the example above where a basketball player is running from right to left on the baseline, the first joystick can be used to maintain movement of the player across the base line while the second joystick can at the same time be used to cause the player to pass the ball behind the player to another player located behind the player. The invention enables quick and fluid passes to be achieved in a very intuitive and realistic manner, and in a manner that greatly improves the overall enjoyment of

sports games involving frequent passing of an object from one player to another player or the like.

[0016] The second joystick (the passing joystick) can operate in an analog or digital mode. In other words, the game may be configured such that the passing joystick must be moved to a maximum inclination to indicate a pass in the direction indicated. Alternatively, the passing joystick can be analog, thereby enabling the amount of inclination to be used to indicate, for example, the type of pass, distance of pass, speed of pass or any other suitable parameter for the pass.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] These and other features, objects and advantages of the instant invention will be better understood from review of the following detailed description of the invention when read in conjunction with the following drawings, in which:

[0018] **FIG. 1** shows a game console for use in playing videogames and a game controller for enabling the user to control operation of the game;

[0019] **FIG. 2** is a screen shot of a basketball videogame incorporating the improved passing feature of the instant invention. In this figure, a player is shown dribbling the ball down the court;

[0020] **FIG. 3** is a screen shot showing the player of **FIG. 2** preparing to make a pass across the court while moving down the court;

[0021] **FIG. 4** is a screen shot showing the player of **FIG. 1** passing the ball across the court while still moving down the court, in accordance with the instant invention.

[0022] **FIG. 5** is a screen shot showing the ball being passed across the court to the intended recipient (other player) of the pass;

[0023] **FIG. 6** is a screen shot showing the other player receiving the pass from the original player of **FIG. 1**;

[0024] **FIG. 7** is a high level flow chart illustrating a first embodiment of the instant invention which uses a two joystick game controller;

[0025] **FIG. 8** is a high level flow chart of a second embodiment of the instant invention which uses a single joystick game controller; and

[0026] **FIGS. 9 and 10** show an exemplary game system that can be used to implement the instant invention and generate the displays of **FIGS. 2-6**.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0027] The preferred embodiments of the instant invention will now be described with reference to the drawings. **FIG. 1** shows a videogame console **10** that can be used to run videogames implementing the improved passing feature of the instant invention. While the NINTENDO GAMECUBE videogame console is shown in **FIG. 1**, the invention can be implemented on any suitable game platform capable of running sports games, including PC based games incorporating a game controller. In the videogame console **10** of **FIG. 1**, a memory medium, such as a CD or DVD, is used to store videogame software. The software containing disk

or other storage medium is placed in the console for controlling the operation thereof and enabling a desired game to be played on the console. The console preferably includes a graphics co-processor in addition to the central processing unit (CPU) in order to enable fast action games to be played and displayed in a very realistic and exciting manner. The console is typically connected to a display device, such as a television.

[0028] The game console is also provided with a game controller **20** for use by the user in controlling the game by providing input to the console **10** through selective operation of the buttons and other control elements on the controller **20**. The controller **20** is preferably connected by wire **22** to the console via the connection port **24**, although a wireless connection or any other operable connection may be used. The controller **20** includes several different buttons that provide various corresponding signals to the game console for use by the game software to control the game in accordance therewith. More particularly, the exemplary controller **20** of **FIG. 1** includes a cluster of four digital buttons **26a-26d**, two analog buttons **28a** and **28b**, a joypad **30**, a first analog joystick **32** and a second analog joystick **34**, as well as other control elements, such as a start/stop button. Thus, the controller **20** of **FIG. 1** includes dual analog joysticks **32** and **34**.

[0029] The instant invention has particular applicability to sports videogames in which a player passes a game object, such as a ball or puck, during game play. Such games include but are not limited to basketball, baseball, soccer, football and hockey. In accordance with the instant invention, the game software is programmed to respond to signals from the controller **20**, such that operation of the first joystick **32** causes the player to move in the game in the direction indicated thereby, such as dribble down a basketball court or a soccer field, and the second joystick **34** causes passing of the game object (e.g., basketball or soccer ball) in the direction indicated by the direction of the joystick. Thus, in accordance with the instant invention the player can pass in a different direction than the player is moving. This enables a basketball player to, for example, pass the ball to a player behind him when dribbling down the court, without having to turn and face the other player prior to passing the ball. In accordance with a preferred embodiment of the instant invention, this play is achieved by holding the first joystick **32** in the forward direction and then, when the pass is desired, pulling the second joystick **34** in the reverse direction. Any other combination of moving angles and passing angles can be achieved simply by operating the joysticks **32** and **34** independently with, for example, the user's thumbs.

[0030] By using the joysticks **32** and **34** to respectively control the movement and passing in the game, a pass can be made in a very quick and fluent manner, and also without alerting the opponent in advance as to the direction of the pass by having to face in the direction of the pass. Regardless of the direction that the user is moving, the passing stick (joystick **34**) can be easily and quickly operated in any direction to pass the ball in any direction. Preferably, the passing stick **34** operates in a digital mode, i.e., the analog passing stick only causes a pass when it is rotated to its maximum inclination. Thus, while the stick **34** is an analog stick the software preferably uses it in a digital (pass/no pass) manner. Other angles other than the maximum may

also be used as the pass threshold, depending on the particular desire of game programmers for a particular application. The passing joystick may also operate in an analog passing mode, wherein the particular amount of inclination is detected and used as a parameter in determining one of more characteristics of the pass. For example, the amount that the passing stick **34** is rotated may be used to determine how far the pass will go, how hard the pass will be, how fast the pass will be, what type of pass will be made, and/or to define any other desired passing characteristic.

[0031] A major advantage of the instant invention is that the user can perform quick and easy passes during a sports game and in a manner that more closely simulates real sports play. In contrast to the regular passing method of prior games, the instant invention enables, for example, a basketball player to move down the center of the court on a fast break towards one player in the lane, thereby drawing the defender towards that player thinking that you intend to pass to that player, then hitting the passing stick **34** to pass to another player that is wide open because of the movement of the defender. In this example, the user was able to improve his play by drawing the defender away from one player and then passing (in a direction different than the moving direction) to another player. This type of fast break play could not be done with the regular passing of prior games because the player had to be facing the player he passes to. This play is also difficult with the icon passing method because there is not enough time to enter icon passing mode with one button and select a player to pass to with another button. The quick passing feature provided by the instant invention greatly improves sports games by making passing much easier, faster and more realistic, thereby improving the entire game as compared to prior games.

[0032] FIGS. 2-6 show a series of screen shots in a basketball videogame that implements the improved passing feature of the instant invention. **FIG. 2** shows a first player **150** dribbling a basketball **154** down the court towards two defenders. As can be seen in **FIG. 2**, the player is moving directly down court as a result of the user pushing the first joystick **32** in the forward direction. A teammate (second player **152**) of the first player **150** is positioned across the court or to the left of the first player **150**. **FIG. 3** shows the same player **150** advancing further down the court with the ball **154** and about the pass the ball **154** to the second player **152**. **FIG. 4** shows the first player **150** passing the ball **154** to the second player **152** behind his back while still traveling in the forward direction. This pass is achieved by moving the passing joystick **34** to the left while the first joystick **32** is continued to be held in the forward direction. Thus, the pass can be made quickly and without alerting or telegraphing the pass to the defenders in advance of the pass. **FIG. 5** shows the ball **154** in route to the second player **152**. **FIG. 6** shows the second player catching the passed ball. The second player **152** now has the ball and the user can control this second player and pass the ball **154** in the same manner just described, i.e. by moving the player with the first joystick **32** and passing the ball with the second joystick **34**. As can be seen from FIGS. 2-6 and from the description above, the invention enables the player to pass the ball in any direction regardless of which and independently from the direction in which the user is moving the player or in which the player is facing.

[0033] The invention is not limited to any specific types of sports games and can be implemented in any game where passing of an object from one player to another is used. The invention is particularly advantageous for use in connection with sports videogames with fast passing action, such as football, baseball, basketball, hockey, soccer and the like. In football, the player could for example use the quick passing feature of the instant invention to pass to any of his downfield players or to a guy cutting across backfield without having to face in any specific direction. In baseball, an outfielder could, for example, use the quick passing feature to designate any of the bases to throw to. In soccer and hockey the user could use the quick passing feature to pass the ball or the puck in the same manner described above with respect to basketball, i.e. the second stick **34** is used to pass the ball or puck in any direction regardless of the moving direction indicated by the first joystick **32**.

[0034] The instant invention is not difficult to implement in a videogame. To implement the invention, the game software can simply be programmed to look at the second joystick **34** for a pass signal instead of, for example, the passing button and first joystick **32** in the regular passing method of the prior art. The animation for the game is then preferably also updated to show passes being performed in a direction that is different from the moving direction. The invention enables trick passing animation (such as the behind the back pass shown in **FIG. 4**) to be used in a more realistic and effective manner in sports games.

[0035] While the preferred embodiment of the instant invention uses two analog joysticks (e.g., joysticks **32** and **34**), other embodiments are also possible. For example, if a controller only has one analog joystick, the quick passing feature of the present invention could be implemented through the use of a "continue moving" button or the like. In this embodiment, one of the buttons on the controller would cause the player to continue to move in the direction in which the player is moving at the time the button is pressed. The joystick can then be used as a passing joystick (like **34**) to enable passing in any direction regardless of the direction in which the player is moving in the continue moving mode. Thus, in this alternative embodiment, a single joystick is used to control both moving and passing, but the player is still able to pass in a direction that is different from the moving or facing direction, due to the "continue moving" button. Obviously in this alternative embodiment, a certain amount of control over the player is lost as compared to the dual analog stick embodiment described above. However, the benefit of being able to pass in a direction different from the direction of movement of the player is still provided. In addition, the joypad **30**, instead of a second joystick, could be used to control the direction of a pass independently of the direction of the player's movement.

[0036] As can be seen from the foregoing description, the invention greatly enhances sports games by enabling passing of a game object (e.g., ball) in a direction that is different from the moving direction of the player and without requiring use of the icon passing method. By using the second joystick for passing, passing and moving are made independent from one another and enable the player much greater freedom to pass the ball in a more realistic, fluid and effective manner as compared to prior art passing techniques.

[0037] FIG. 7 shows a high level flow chart of the main steps performed in accordance with an embodiment of the invention that uses a game controller having two analog joysticks. As shown in FIG. 7, the process starts upon initiation of gameplay, such as by starting a sports videogame (step 700). The game software is programmed to monitor the game controller for signals from the first joystick (step 702). When a moving signal is received (step 704), the software is programmed to move the player on the virtual playing field in the direction indicated by the signal from the first joystick (step 706). At the same time, the software is programmed to monitor the second joystick for control signals indicating the user's desire to pass the game object (e.g., basketball) from the player currently in control of the ball to another player (step 708). When a pass signal is received from the second joystick (step 710), the software is programmed to display a pass of the game object in the direction indicated by the second joystick while continuing to display the passing player moving in the direction indicated by the first joystick (step 712). Inasmuch as programming techniques are known to implement the gameplay features based on the disclosure herein, particular details regarding the programming of a game to operate as described herein is not provided.

[0038] FIG. 8 shows a high level flow chart of the main steps performed in accordance with an embodiment of the invention that uses a game controller having only one analog joystick and at least one other control element, such as a digital button or cross-switch. As shown in FIG. 8, the process starts upon initiation of gameplay, such as by starting a sports videogame (step 800). The game software is programmed to monitor the game controller for signals from the joystick. When a moving signal is received, the software is programmed to move the player on the virtual playing field in the direction indicated by the signal from the joystick (step 802). At the same time, the software is programmed to monitor the other controller element (e.g., button) for a control signal indicating that the user desires to have the player continue to move in the current direction (step 804), so that the joystick can then be used to cause a pass at a desired time during the continued movement of the player in the current direction. When such a signal is received (step 806), the software is programmed to cause the player to continue to move in the direction indicated by the joystick at the time the button is pressed and the corresponding signal is received (step 808). The software then monitors the joystick for a signal indicating the user's desire to pass the game object (step 810) from the player currently in control of the ball to another player. When a pass signal is received from the joystick (step 812), the software is programmed to display a pass of the game object in the direction indicated by the joystick while continuing to display the passing player moving in the current direction (step 814), i.e., the direction defined by the joystick at the time the button was pressed. In this way, the fluid passing feature of the instant invention is implemented in a game console having a controller with only a single joystick. Of course, this method could also be implemented using a two joystick controller by using a button on the controller for the continue-to-move feature rather than using the second joystick. However, when two joysticks are present, the preferred method is shown in FIG. 7.

[0039] Example Illustrative Implementation

[0040] FIG. 10A shows an example interactive 3D computer graphics system 50. System 50 can be used to play interactive 3D video games with interesting animation provided by a preferred embodiment of this invention. System 50 can also be used for a variety of other applications.

[0041] In this example, system 50 is capable of processing, interactively in real time, a digital representation or model of a three-dimensional world. System 50 can display some or the entire world from any arbitrary viewpoint. For example, system 50 can interactively change the viewpoint in response to real time inputs from handheld controllers 52a, 52b or other input devices. This allows the game player to see the world through the eyes of someone within or outside of the world. System 50 can be used for applications that do not require real time 3D interactive display (e.g., 2D display generation and/or non-interactive display), but the capability of displaying quality 3D images very quickly can be used to create very realistic and exciting game play or other graphical interactions.

[0042] To play a video game or other application using system 50, the user first connects a main unit 54 to his or her color television set 56 or other display device by connecting a cable 58 between the two. Main unit 54 produces both video signals and audio signals for controlling color television set 56. The video signals are what controls the images displayed on the television screen 59, and the audio signals are played back as sound through television stereo loudspeakers 61L, 61R.

[0043] The user also needs to connect main unit 54 to a power source. This power source may be a conventional AC adapter (not shown) that plugs into a standard home electrical wall socket and converts the house current into a lower DC voltage signal suitable for powering the main unit 54. Batteries could be used in other implementations.

[0044] The user may use hand controllers 52a, 52b to control main unit 54. Controls 60 can be used, for example, to specify the direction (up or down, left or right, closer or further away) that a character displayed on television 56 should move within a 3D world. Controls 60 also provide input for other applications (e.g., menu selection, pointer/cursor control, etc.). Controllers 52 can take a variety of forms. In this example, controllers 52 shown each include controls 60 such as joysticks, push buttons and/or directional switches. Controllers 52 may be connected to main unit 54 by cables or wirelessly via electromagnetic (e.g., radio or infrared) waves.

[0045] To play an application such as a game, the user selects an appropriate storage medium 62 storing the video game or other application he or she wants to play, and inserts that storage medium into a slot 64 in main unit 54. Storage medium 62 may, for example, be a specially encoded and/or encrypted optical and/or magnetic disk. The user may operate a power switch 66 to turn on main unit 54 and cause the main unit to begin running the video game or other application based on the software stored in the storage medium 62. The user may operate controllers 52 to provide inputs to main unit 54. For example, operating a control 60 may cause the game or other application to start. Moving other controls 60 can cause animated characters to move in different directions or change the user's point of view in a 3D world. Depending upon the particular software stored within the storage medium 62, the various controls 60 on the controller 52 can perform different functions at different times.

[0046] As also shown in FIG. 10A, mass storage device 62 stores, among other things, a sports video game program E that enables an interactive game to be played using the system 50 and incorporates the adrenaline feature of the instant invention. The program E in the preferred embodiment makes use of various components of system 50 shown in FIG. 10B including:

[0047] a main processor (CPU) 110,

[0048] a main memory 112, and

[0049] a graphics and audio processor 114.

[0050] In this example, main processor 110 (e.g., an enhanced IBM Power PC 750) receives inputs from hand-held controllers 52 (and/or other input devices) via graphics and audio processor 114. Main processor 110 interactively responds to user inputs, and executes a video game or other program supplied, for example, by external storage media 62 via a mass storage access device 106 such as an optical disk drive. As one example, in the context of video game play, main processor 110 can perform collision detection and animation processing in addition to a variety of interactive and control functions.

[0051] In this example, main processor 110 generates 3D graphics and audio commands and sends them to graphics and audio processor 114. The graphics and audio processor 114 processes these commands to generate interesting visual images on display 59 and interesting stereo sound on stereo loudspeakers 61R, 61L or other suitable sound-generating devices. Main processor 110 and graphics and audio processor 114 also perform functions to support and implement the preferred embodiment program E based on instructions and data E' relating to the program that is stored in DRAM main memory 112 and mass storage device 62.

[0052] As further shown in FIG. 10B, example system 50 includes a video encoder 120 that receives image signals from graphics and audio processor 114 and converts the image signals into analog and/or digital video signals suitable for display on a standard display device such as a computer monitor or home color television set 56. System 50 also includes an audio codec (compressor/decompressor) 122 that compresses and decompresses digitized audio signals and may also convert between digital and analog audio signaling formats as needed. Audio codec 122 can receive audio inputs via a buffer 124 and provide them to graphics and audio processor 114 for processing (e.g., mixing with other audio signals the processor generates and/or receives via a streaming audio output of mass storage access device 106). Graphics and audio processor 114 in this example can store audio related information in an audio memory 126 that is available for audio tasks. Graphics and audio processor 114 provides the resulting audio output signals to audio codec 122 for decompression and conversion to analog signals (e.g., via buffer amplifiers 128L, 128R) so they can be reproduced by loudspeakers 61L, 61R.

[0053] Graphics and audio processor 114 has the ability to communicate with various additional devices that may be present within system 50. For example, a parallel digital bus 130 may be used to communicate with mass storage access device 106 and/or other components. A serial peripheral bus 132 may communicate with a variety of peripheral or other devices including, for example:

[0054] a programmable read-only memory and/or real time clock 134,

[0055] a modem 136 or other networking interface (which may in turn connect system 50 to a telecommunications network 138 such as the Internet or other digital network from/to which program instructions and/or data can be downloaded or uploaded), and

[0056] flash memory 140.

[0057] A further external serial bus 142 may be used to communicate with additional expansion memory 144 (e.g., a memory card) or other devices. Connectors may be used to connect various devices to busses 130, 132, 142. For further details relating to system 50, see for example U.S. patent application Ser. No. 09/723,335 filed Nov. 28, 2000 entitled "EXTERNAL INTERFACES FOR A 3D GRAPHICS SYSTEM" incorporated by reference herein.

[0058] As can be seen from the above-description, the invention greatly improves sports video games by enabling the user to cause a virtual player to pass in one direction while moving in another direction. As a result, the user can cause the virtual player to make unexpected and/or fluid passes during gameplay. In this way, sports games are made much more realistic and enjoyable for the users.

[0059] While the preferred forms and embodiment of the invention have been described herein, various modifications may be made without deviating from the scope of the instant invention, as one skilled in the art will understand from the description herein. The invention is not limited to the particular controller configuration shown in FIG. 1 and may be used with any suitable controller, game console and game software.

What is claimed is:

1. In a videogame, wherein a user interactively controls a game player having a game object in a virtual game environment using a game controller having a first analog joystick and a second analog joystick, the method comprising:

monitoring signals from the first joystick and controlling the moving direction of the game player having a game object based on signals received from the first joystick;

monitoring signals from the second joystick while the moving direction of the player is being controlled by the first joystick; and

upon receipt of signals from the second joystick, display a pass of the game object in a direction indicated by the second joystick while also displaying the player continuing to move in the direction indicated by the first joystick.

2. The method of claim 1, wherein the videogame is a sports videogame having two virtual teams, and the game object is an object used to score points in the videogame.

3. The method of claim 2, wherein the videogame is a basketball videogame and the game object is a virtual basketball.

4. The method of claim 1, further including providing a plurality of trick animations for the player that display the player moving in one direction while passing in another direction, and selecting a trick animation for display from the plurality of animations when the user causes the player

to pass in a direction that is different from the direction that the player is moving in at the time of the pass.

5. The method of claim 1, wherein the videogame is executed on a game console that is connected to a television for display.

6. The method of claim 1, further including using the first joystick as an analog joystick and using the second joystick as a digital joystick, wherein the first joystick adjusts the direction and speed of the player and the second joystick causes a pass upon reaching a predetermined threshold.

7. The method of claim 1, further including using the first joystick and the second joystick as analog joysticks, wherein the first joystick controls the direction and speed of the player based on an angle of inclination thereof, respectively, and the second joystick controls the direction and characteristic of the pass based on the direction and angle of inclination thereof, respectively.

8. The method of claim 7, wherein the angle of inclination of the second joystick controls the speed of the pass of the game object.

9. The method of claim 7, wherein the angle of inclination of the second joystick controls the type of pass of the game object.

10. The method of claim 7, wherein the angle of inclination of the second joystick controls the distance of the pass.

11. In a videogame, wherein a user interactively controls a game player having a game object in a virtual game environment using a game controller having an analog joystick and a digital control element, the method comprising:

monitoring signals from the joystick and controlling the moving direction of the game player having a game object based on signals received from the joystick;

monitoring signals from the digital control element while the moving direction of the player is being controlled by the joystick;

upon receipt of a signal from the control element, displaying the player continuing to move in the current direction that the player was moving at the time the signal from the control element is received;

while continuing to move the player in the current direction, monitoring the joystick for a pass signal; and

upon receiving the pass signal, displaying a pass of the game object in a direction indicated by the joystick while also displaying the player continuing to move in the current direction.

12. The method of claim 11, wherein the videogame is a sports videogame having two virtual teams, and the game object is an object used to score points in the videogame.

13. The method of claim 12, wherein the videogame is a basketball videogame and the game object is a virtual basketball.

14. The method of claim 11, further including providing a plurality of trick animations for the player that display the player moving in one direction while passing in another direction, and selecting a trick animation for display from the plurality of animations when the user causes the player to pass in a direction that is different from the direction that the player is moving in at the time of the pass.

15. The method of claim 11, wherein the videogame is executed on a game console that is connected to a television for display.

16. The method of claim 12, further including using the first joystick as an analog joystick, wherein the first joystick adjusts the direction and speed of the player.

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