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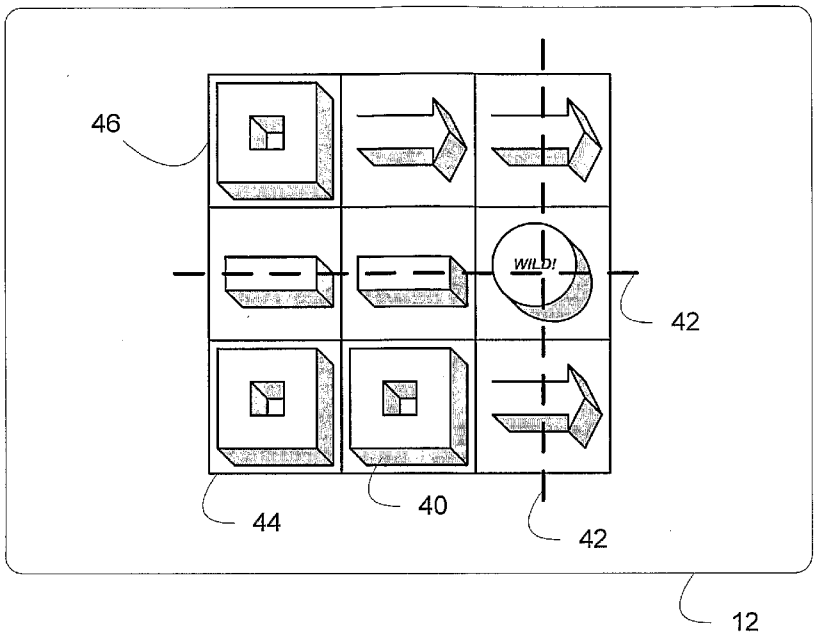

(57) **Abstract:** Embodiments of the invention described herein include, in a reel-based gaming machine, a system and method of displaying a gaming outcome. The system and method include displaying a reel image on a display, wherein displaying includes displaying one or more symbols as three-dimensional symbols. The method also includes animating a three-dimensional object on the display, wherein animating includes rendering at least a portion of the animation at around the time the image is displayed.

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SYSTEM AND METHOD FOR 3D GAMING EFFECTS

Related Applications

This application claims the priority benefit of U.S. Provisional Application Serial No. 60/715,643, filed September 9, 2005, the contents of which are incorporated herein by reference.

Copyright

Background of the Invention

Field of the Invention

This patent application pertains generally to gaming systems, and more particularly, but not by way of limitation, to a system and method for displaying three-dimensional gaming effects in a gaming machine.

Background Information

Video gaming machines are popular within the gaming industry. They typically are operable to play traditional games such as slots, poker, bingo, keno and blackjack. Such machines have been enhanced in recent years by adding effects that make them more attractive, exciting and entertaining.

Pick games and reel-based games are popular. In a pick game, the player chooses from a number of selections. The selection then triggers particular gaming outcomes.

In reel-based games, mechanical or simulated slot reels are rotated and stopped to place symbols on the reels in visual association with one or more pay lines. If the selected outcome is one of the winning outcomes defined by a pay table, the processor awards the player with a number of credits associated with the winning outcome.

Pick games are either used alone, or in combination with reel-based games to provide bonus events. Bonus events occur outside the reel spin, injecting either a random event or fostering some player interaction to trigger a random event.

No matter the type of game, there is a continuing need to develop new and exciting effects for video gaming machines.

Brief Description of the Drawings

FIG. 1 illustrates a gaming machine according to the present invention;

FIG. 2 is a block diagram of a control system suitable for operating the gaming machine of FIG. 1; and

FIGS. 3 and 4 illustrate reel-based games.

Detailed Description of the Invention

In the following detailed description of the preferred embodiments, reference is made to the accompanying drawings which form a part hereof, and in which is shown by way of illustration specific embodiments in which the invention may be practiced. It is to be understood that other embodiments may be utilized and structural changes may be made without departing from the scope of the present invention.

FIG. 1 illustrates an exemplary video gaming machine 10, also referred to as a Video Lottery Terminal (VLT), in which embodiments of the invention may be implemented. In some embodiments, gaming machine 10 is operable to conduct a wagering game such as mechanical or video slots, poker, keno, bingo, or blackjack.

The gaming machine 10 shown in FIG. 1 includes a video display 12 such as a cathode ray tube (CRT), liquid crystal display (LCD), plasma, or other type of video display known in the art. In one such embodiment, a touch screen overlies the display 12. In the illustrated embodiment, the gaming machine 10 is an "upright" version in which the display 12 is oriented vertically relative to a player. Alternatively, the gaming machine may be a "slant-top" version in which the display 12 is slanted at about a thirty-degree angle toward the player. Other orientations could be used as well.

Gaming machine 10 includes one or more credit receiving mechanisms 14 for receiving credits to be used for placing wagers in the game. The credit receiving mechanisms 14 may, for example, include a coin acceptor, a bill acceptor, a ticket reader, and a card reader. The bill acceptor and the ticket reader may be combined into a single unit. The card reader may, for example, accept magnetic cards and smart (chip) cards coded with money or designating an account containing money. In some embodiments, credit receiving mechanism 14 receives credits through a network interface.

In some embodiments, the gaming machine 10 includes a user interface comprising a plurality of push-buttons 16, the above-noted touch screen, and other possible devices. The plurality of push-buttons 16 may, for example, include one or more "bet" buttons for wagering, a "play" button for commencing play, a "collect" button for cashing out, a help" button for viewing a help screen, a "pay table" button for viewing the pay table(s), and a "call attendant" button for calling an attendant. Additional game specific buttons may be provided to facilitate play of the specific game executed on the machine. The touch screen may define touch keys for implementing many of the same functions as the push-buttons. Other possible user interface devices include a keyboard and a pointing device such as a mouse or trackball.

A processor controls operation of the gaming machine 10. In response to receiving a wager and a command to initiate play, the processor randomly selects a game outcome from a plurality of possible outcomes and causes the display 12 to depict indicia representative of the selected game outcome. In the case of slots for

example mechanical or simulated slot reels are rotated and stopped to place symbols on the reels in visual association with one or more pay lines. If the selected outcome is one of the winning outcomes defined by a pay table, the processor awards the player with a number of credits associated with the winning outcome.

FIG. 2 is a block diagram of a control system suitable for operating the gaming machine 10. Money/credit detector 22 signals a processor 20 when a player has inserted money, tickets, tokens, cards or other mechanism for obtaining credits for plays on the gaming machine through credit mechanisms 14. Using a button panel 16 and/or a touch screen 18, the player may select any variables associated with the wagering game and place his/her wager to purchase a play of the game. In a play of the game, the processor 20 generates at least one random event using a random number generator (RNG) and provides an award to the player for a winning outcome of the random event.

Alternatively, the random event may be generated by a remote computer using an RNG or pooling schema and then transmitted to the gaming machine. The processor 20 operates the display 12 to represent the random event(s) and outcome(s) in a visual form that can be understood by the player. In addition to the processor 20, the control system may include one or more additional slave control units for operating the display 12 and any secondary displays.

System memory 24 stores control software, operational instructions and data associated with the gaming machine. In one embodiment, the system memory 24 comprises a separate read-only memory (ROM) and battery-backed random-access memory (RAM). However, it will be appreciated that the system memory 24 may be implemented on any of several alternative types of memory structures or may be implemented on a single memory structure.

A payoff mechanism 26 is operable in response to instructions from the processor 20 to award a payoff to the player. The payoff may, for example, be in the form of a number of credits. The number of credits is determined by one or more math tables stored in, for example, system memory 24.

In one embodiment, gaming machine 10 includes a reel-based game with three-dimensional game effects.

In one embodiment, three-dimensional games are implemented using a game design package such as RenderWare Studio 2.0 running, for example, on a processor designed by Intel or AMD.

One three-dimensional reel-based game effect involves displaying a reel image on a display, wherein displaying includes displaying one or more symbols as three-dimensional symbols. One such embodiment is shown in Fig. 3. In the embodiment shown in Fig. 3, one or more of the symbols 40 are displayed as three-dimensional images. The game is activated so that the reels appear to spin and a gaming outcome is displayed. If there is a winning combination one or more of the symbols 40 on a pay line 42 is animated. In one such embodiment, animation of the symbol 40 includes rendering at least a portion of the symbol at the time the gaming outcome is displayed.

In one example embodiment, one or more of the three-dimensional symbols 40 is animated such that it appears to move forward in the display (closer to the viewer).

In another example embodiment, one or more of the three-dimensional symbols 40 is animated such that a logo appears to fly off the symbol.

In yet another example embodiment, one or more of the three-dimensional symbols 40 is animated such that the symbol appears to fall off the pay line. In one such embodiment, if the symbol is a ball, it appears to fall from pay line 42 and bounce around the display.

In yet another example embodiment, one or more of the three-dimensional symbols 40 includes a two-dimensional image and, when a gaming outcome indicates a winning combination, the two-dimensional image is morphed into a three-dimensional image. In one such embodiment, a two-dimensional image of a ball morphs into a three-dimensional representation of a ball. The ball then appears to fall from pay line 42 and bounce around the display. Such an animation may be used, for example, as part of a bonus round. For instance, the ball may bounce until it falls through a hole, with the hole setting the value of a payout.

In another such embodiment, a two-dimensional image of an airplane morphs into a three-dimensional representation of an airplane. The airplane then appears to fly around or within pay line 42.

In another embodiment, animation is used to make the symbol 40 seem to move forward and then morph into a three-dimensional landscape. The landscape can be used, for instance, in a follow-up game.

In one reel-based gaming machine, such as is shown in Fig. 4, a reel image 44 includes symbols 40 displayed on one or more lines 46. A three-dimensional object 48 is displayed on display 12 and moved about the display in an apparently random fashion. When object 48 lands on one of the symbols 40 in the reel image, the three-dimensional object becomes part of a winning combination. In one embodiment, at least a portion of display 12 is rendered at the time the image is displayed.

In the example shown in Fig. 4, for example, a roving wild 48 is moved until it lands on a symbol 40. It replaces the symbol 40 and, if the new pay line is a winning combination, a pay out is made. In the example shown in Fig. 4, if the roving wild falls on the end of the second row, the winning combinations displayed in Fig. 3 are the gaming outcome.

In one embodiment, system 10 maps a texture on one or more symbols 40 or objects 48 during the game.

In one reel-based gaming machine, such as is shown in Fig. 4, a reel image 44 and a three-dimensional background are displayed on display 12. Reel image 44 includes symbols 40 displayed on one or more lines 46. During game play, reel image 44 is modified to reflect a gaming outcome and then moved out of the way so that the three-dimensional landscape can be used for a bonus play. In one embodiment, at least a portion of display 12 is rendered at the time the image is displayed.

In the above discussion, the term "processor" is defined to include any digital or analog data processing unit. Examples include any microprocessor or microcontroller capable of embodying the inventions described herein.

Examples of articles comprising machine readable media are floppy disks, hard drives, CD-ROM or DVD media or any other read-write or read-only memory device.

Although specific embodiments have been illustrated and described herein, it will be appreciated by those of ordinary skill in the art that any arrangement which is calculated to achieve the same purpose may be substituted for the specific embodiment shown. This application is intended to cover any adaptations or variations of the present invention. Therefore, it is intended that this invention be limited only by the claims and the equivalents thereof.

Claims

1. In a reel-based gaming machine, a method of displaying a gaming outcome, comprising:

displaying a reel image on a display, wherein displaying includes displaying one or more symbols as three-dimensional symbols;

modifying the reel image to reflect a gaming outcome; and

animating a three-dimensional object on the display, wherein animating includes rendering at least a portion of the animation at around the time the image is displayed.

2. The method according to claim 1, wherein animating a three-dimensional object includes making the object seem to move forward in the display.

3. The method according to claim 2, wherein making the object seem to move forward includes morphing the symbol into a three-dimensional landscape.

4. The method of claim 3, wherein the three-dimensional landscape is used in a follow-up game.

5. The method according to claim 1, wherein animating a three-dimensional object includes making a logo appear to fly off the symbol.

6. The method according to claim 1, wherein the animated three-dimensional object includes a two-dimensional image and wherein animating the three-dimensional object includes morphing the two-dimensional image into a second three-dimensional object.

7. The method according to claim 1, wherein the animated three-dimensional object includes a two-dimensional image and wherein animating the three-dimensional symbol includes morphing the two-dimensional image into a second three-dimensional object and moving the second three-dimensional object around the display.

8. An article comprising a machine readable medium having instructions thereon, wherein the instructions, when executed in a computer, create a system for executing the method of claim 1.

9. The method according to claim 1, wherein animating the three-dimensional object includes moving the animated three-dimensional object such that it lands on one of the three-dimensional symbols displayed in the reel image, wherein the animated three-dimensional object becomes part of a winning combination.

10. The method of claim 9, wherein moving includes rendering at least a portion of the image at around the time the image is displayed.

11. The method of claim 9, wherein moving includes projecting a texture on the reel image.

12. An article comprising a machine readable medium having instructions thereon, wherein the instructions, when executed in a computer, create a system for executing the method of claim 9.

13. In a reel-based gaming machine having a display, a method of displaying a gaming outcome, comprising:

displaying a reel image and a background on the display, wherein the reel image includes symbols displayed on one or more lines and wherein at least a portion of the background appears to be a three dimensional landscape;

modifying the reel image to reflect a gaming outcome; and

moving the modified reel image so that the three-dimensional landscape can be used for a bonus play.

14. The method of claim 13, wherein moving includes rendering at least a portion of the reel image.

15. An article comprising a machine readable medium having instructions thereon, wherein the instructions, when executed in a computer, create a system for executing the method of claim 13.

16. A reel-type based gaming system, comprising:

a display;

a processor connected to the display; and

a user interface connected to the processor;

wherein the processor displays a reel image having one or more three-dimensional symbols on the display, modifies the reel image to reflect a gaming outcome and animates a three-dimensional object on the display, wherein animating includes rendering at least a portion of the animation at around the time the image is displayed.

17. The system of claim 16, wherein the processor executes program code for simulating movement of the three-dimensional object.

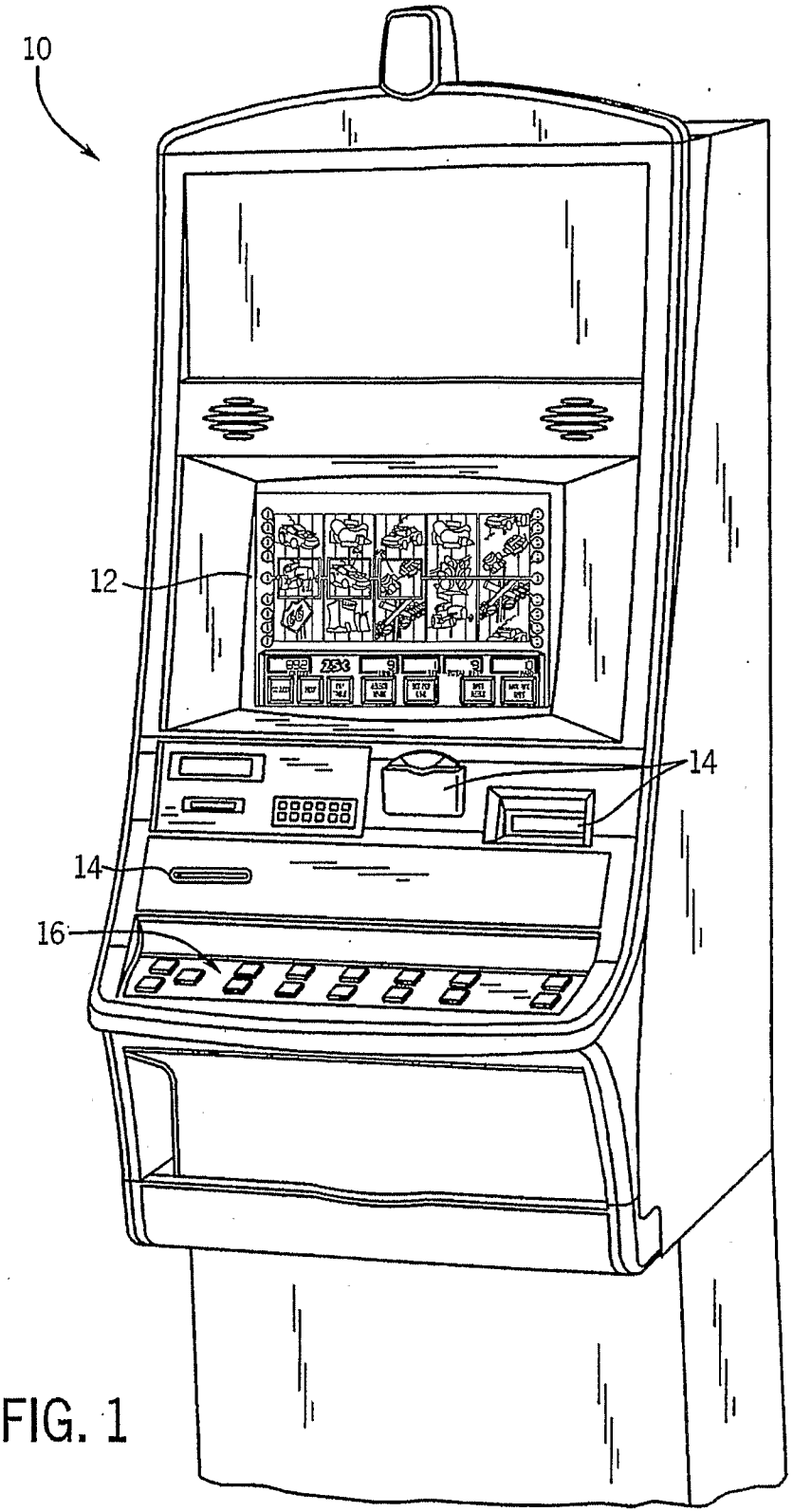

FIG. 1

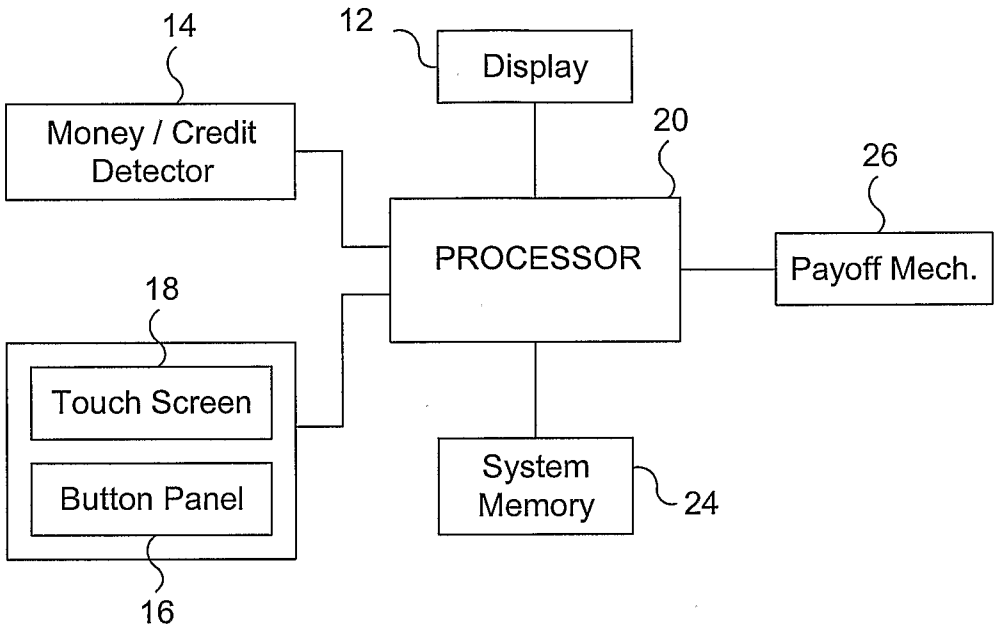
14
12
Display
Money / Credit Detector
20
26
PROCESSOR
Payoff Mech.
18
Touch Screen
Button Panel
System Memory
24
16

FIG. 2

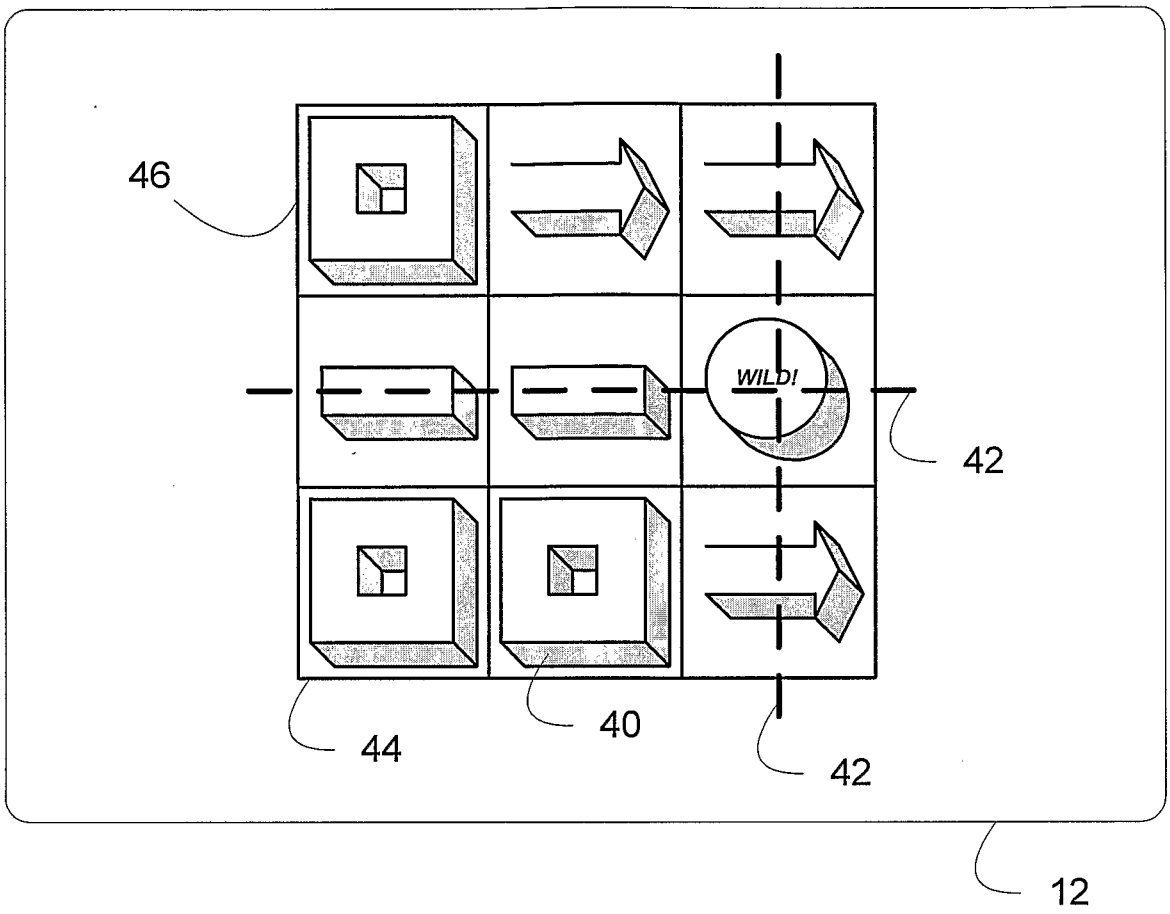

FIG. 3

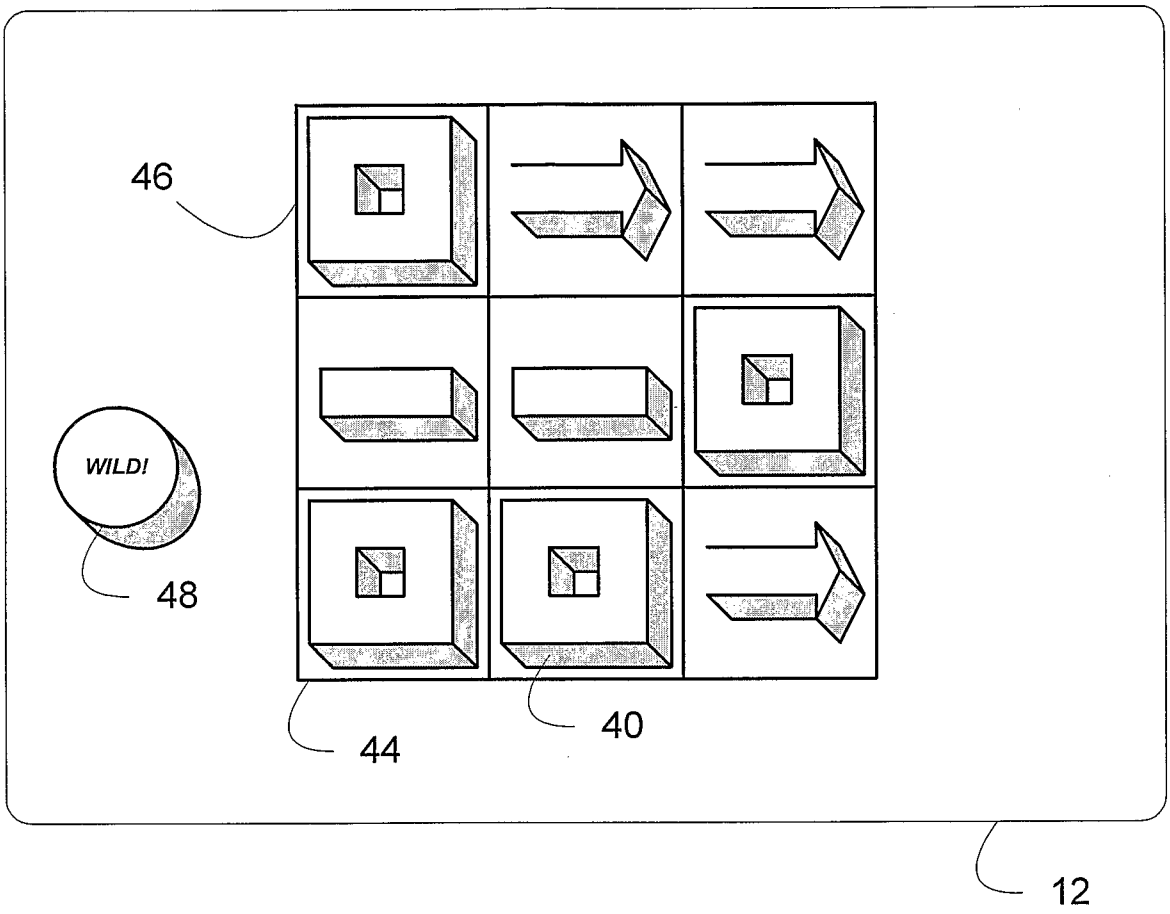

FIG. 4