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(54) **GAMING MACHINE WITH HORIZONTAL SCROLLING AND MATCHING**

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(57) **ABSTRACT**

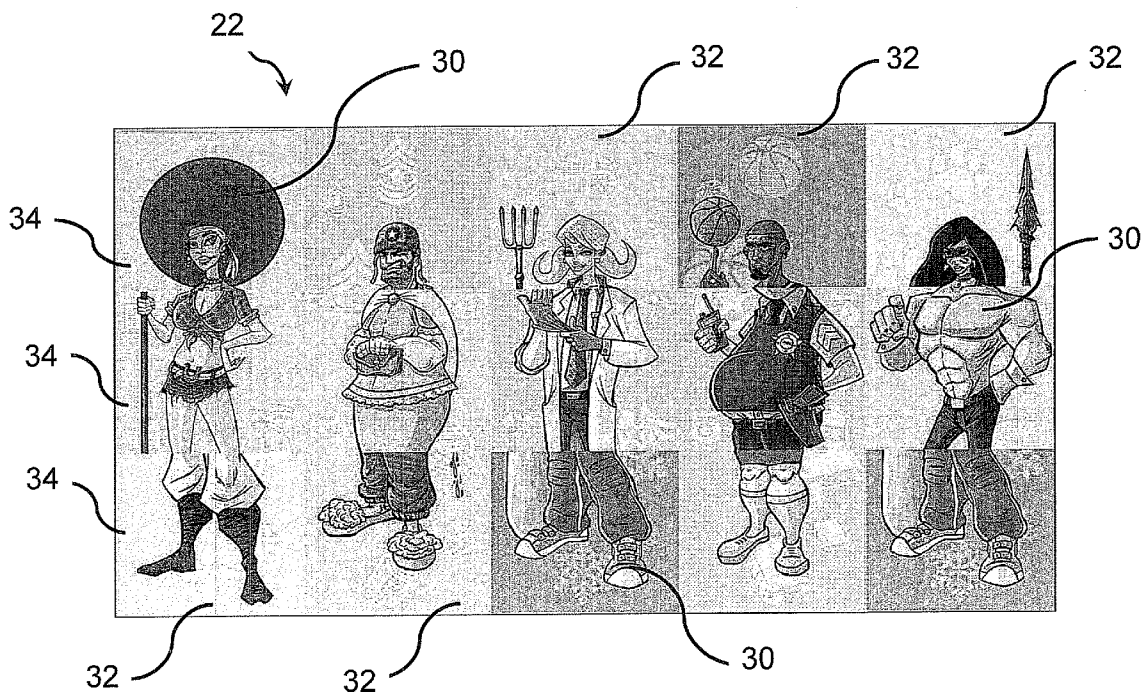
A gaming machine with horizontal scrolling and matching is disclosed. The gaming machine features an array of multiple game positions each having a plurality of horizontal segments. Each horizontal segment has at least one element selected from a first plurality of possible elements to form a plurality of individual contiguous subsets across the horizontal segments. The plurality of individual contiguous subsets has both winning and non-winning configurations. During play of the game, the elements of at least one horizontal segment are variable relative each game position to form an individual contiguous subset across the horizontal segments at each game position. If the contiguous subset is one which is recognized as a predetermined winning configuration, a winning outcome is achieved and the player wins a prize.

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**Related U.S. Application Data**

(60) Provisional application No. 61/551,559, filed on Oct. 26, 2011.



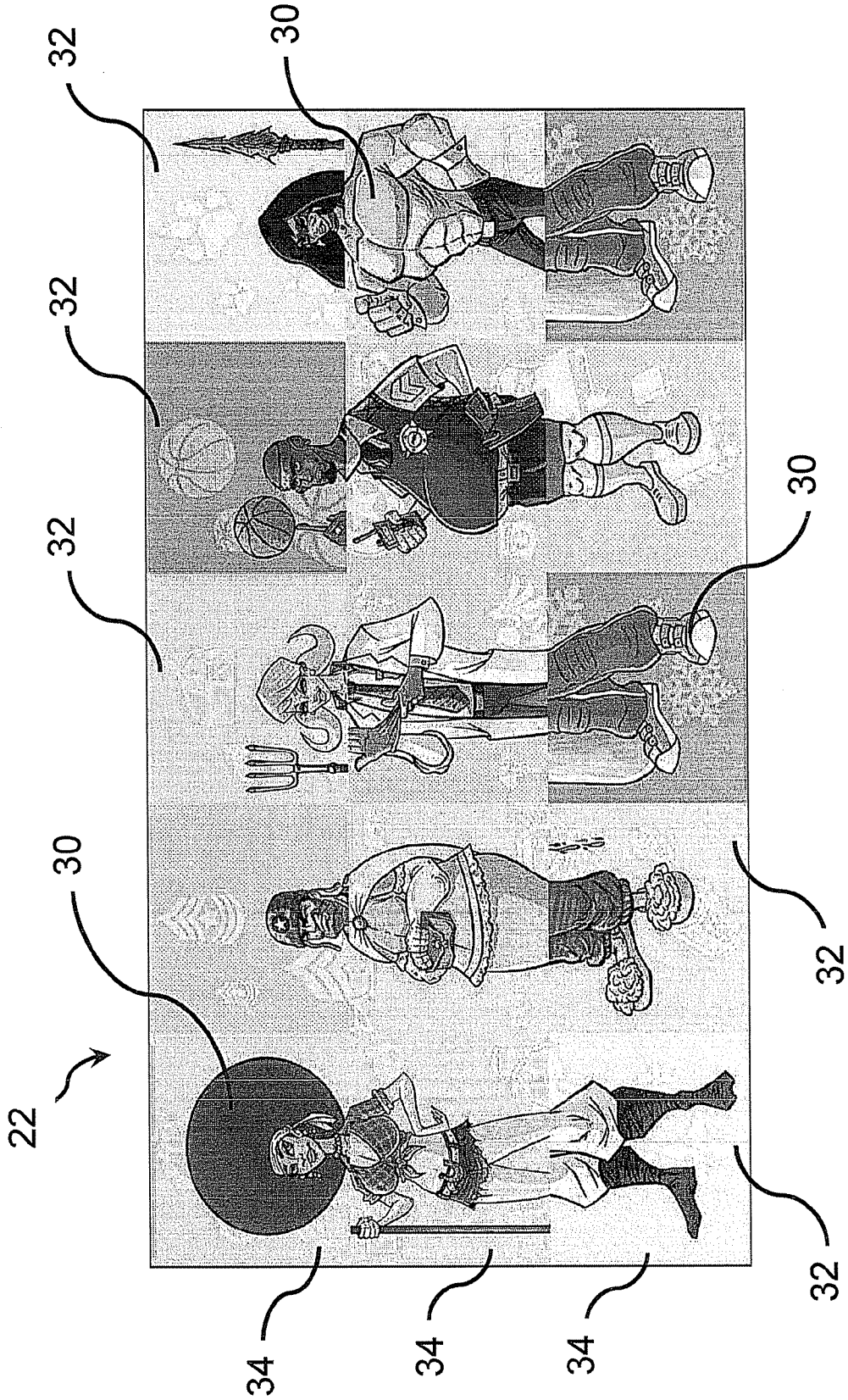


Fig. 1A

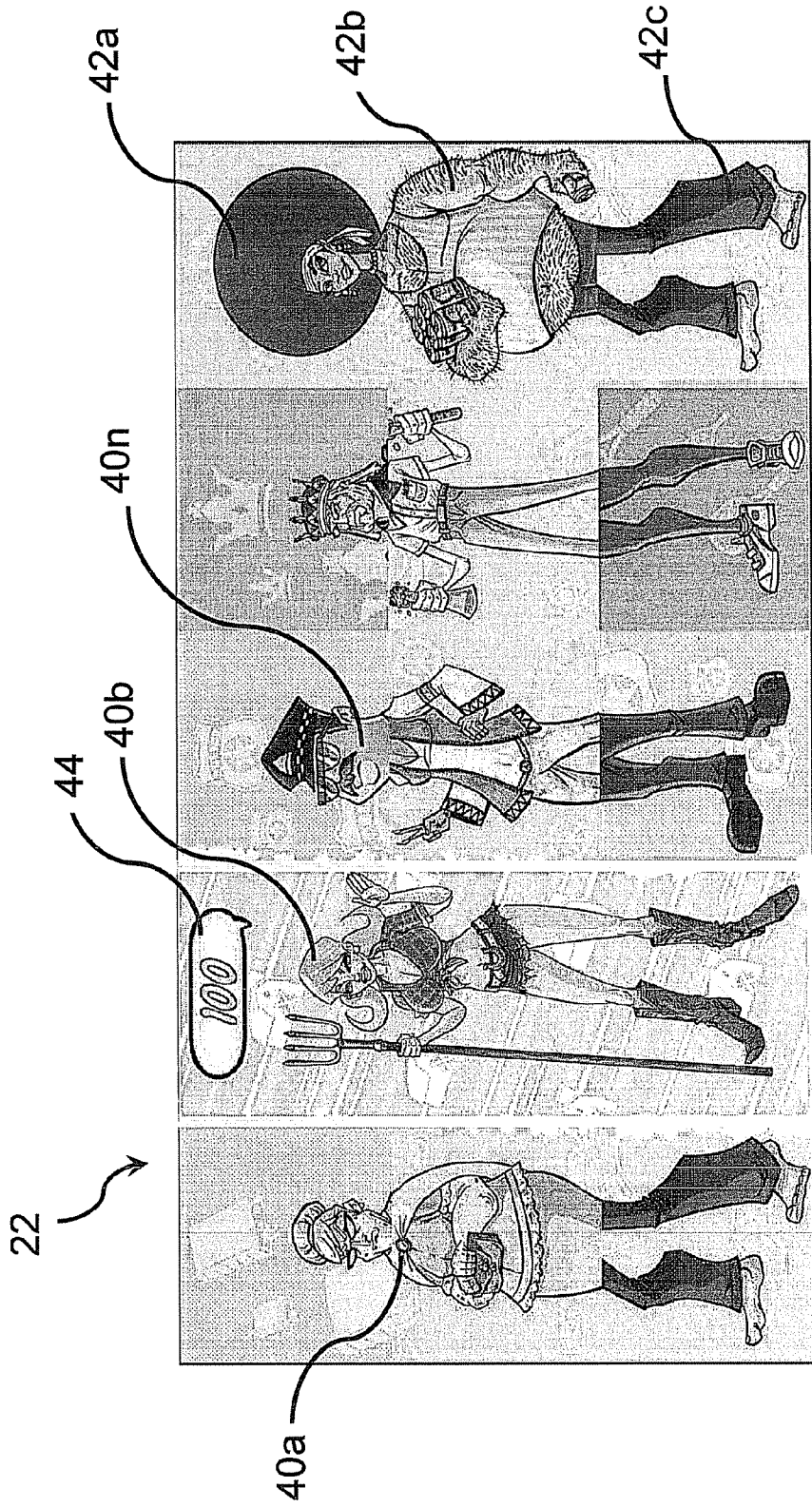


Fig. 1B

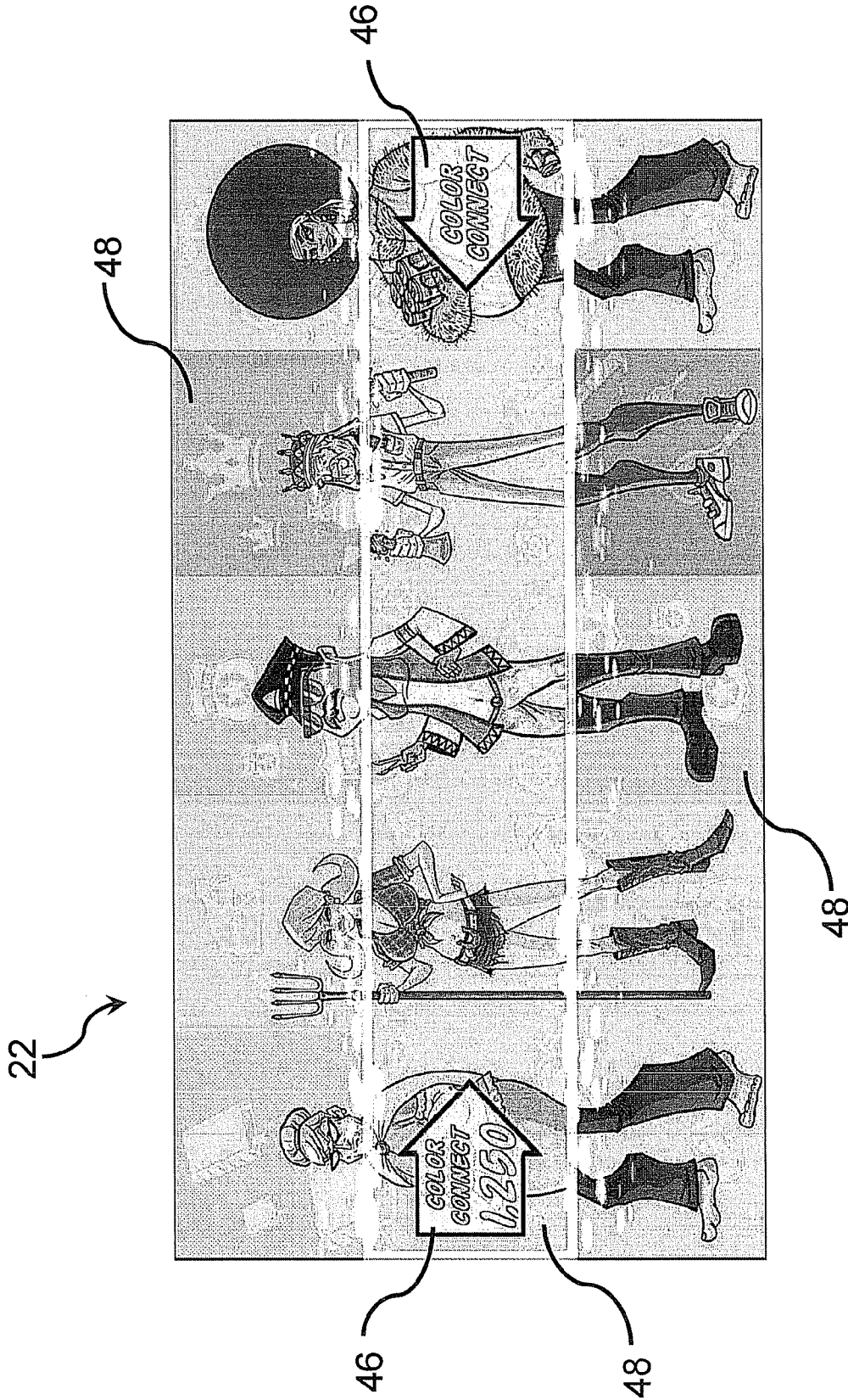


Fig. 1C

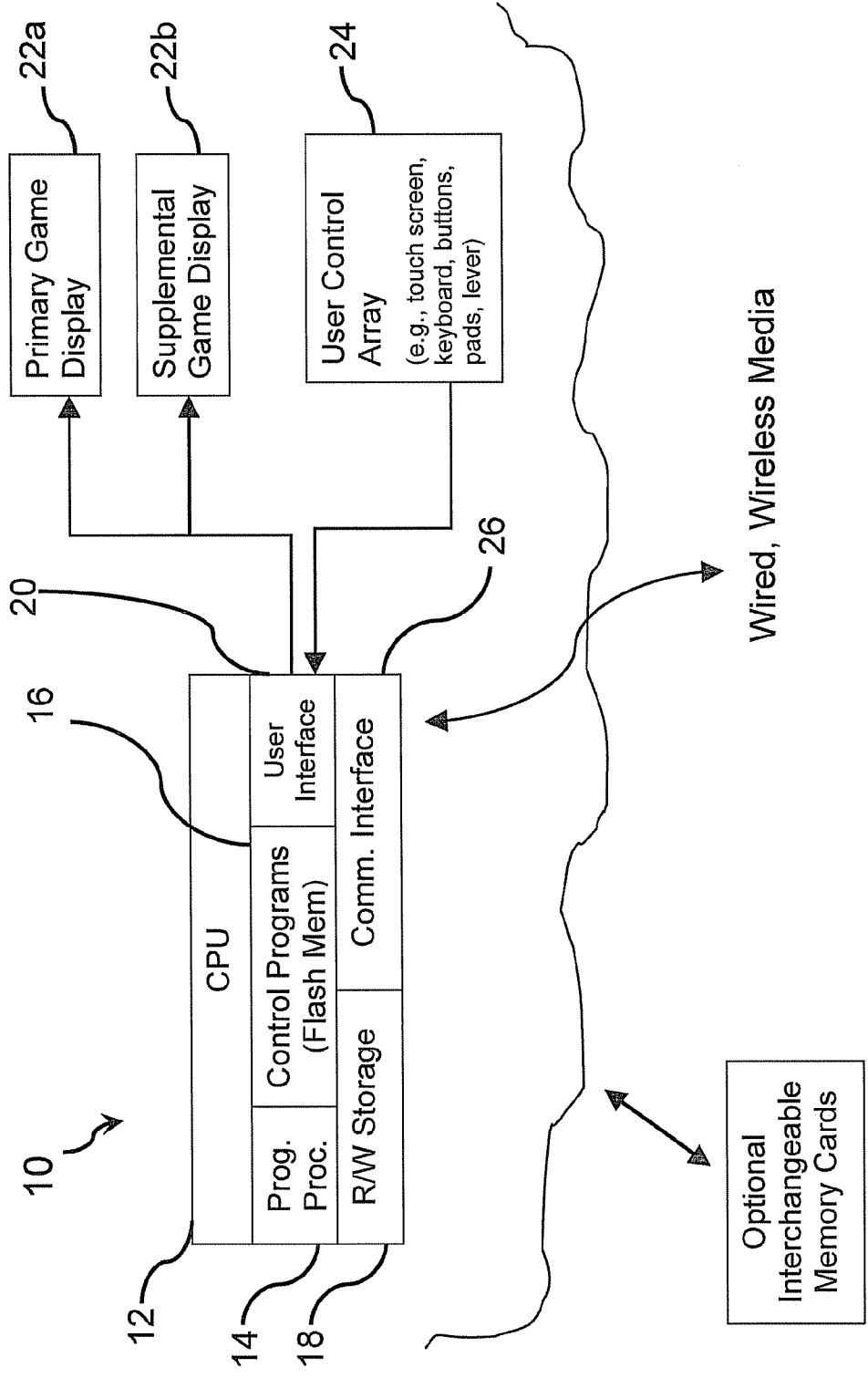
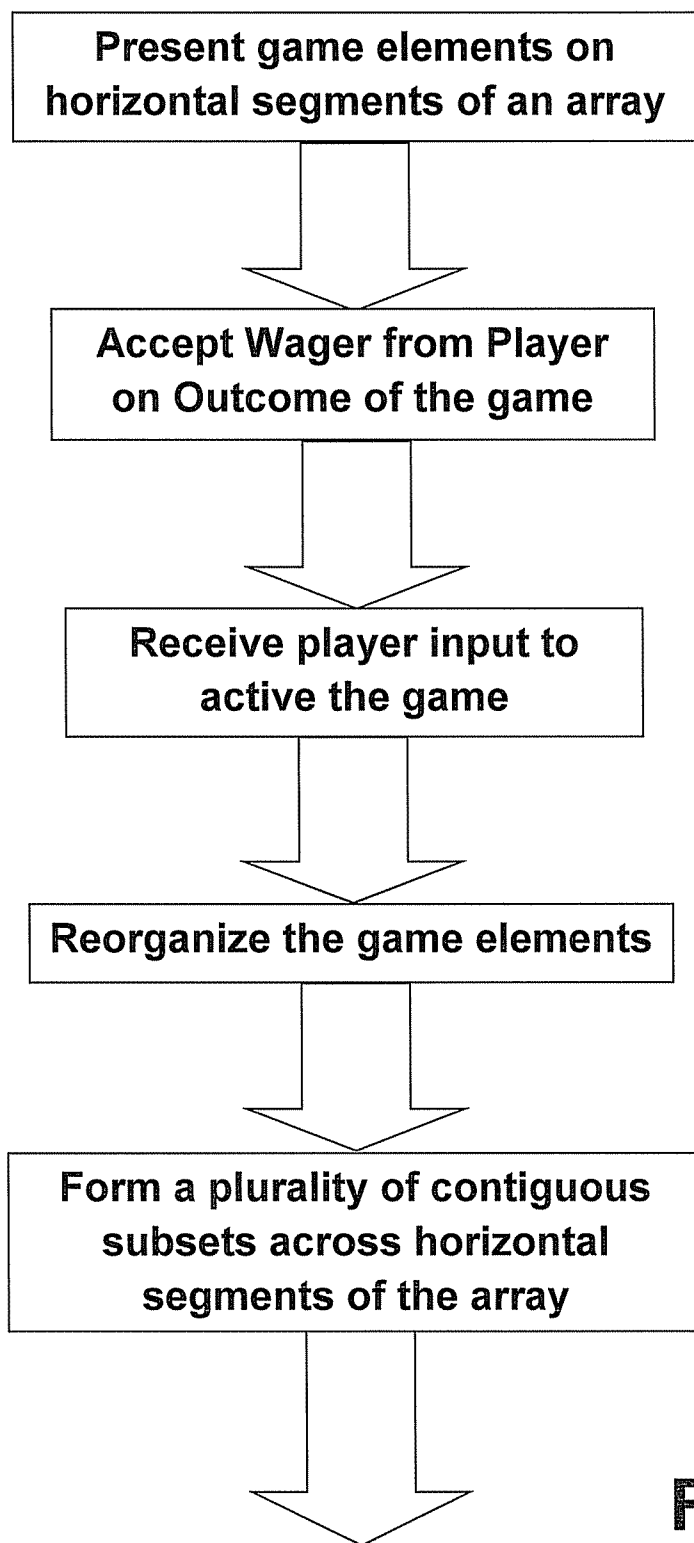
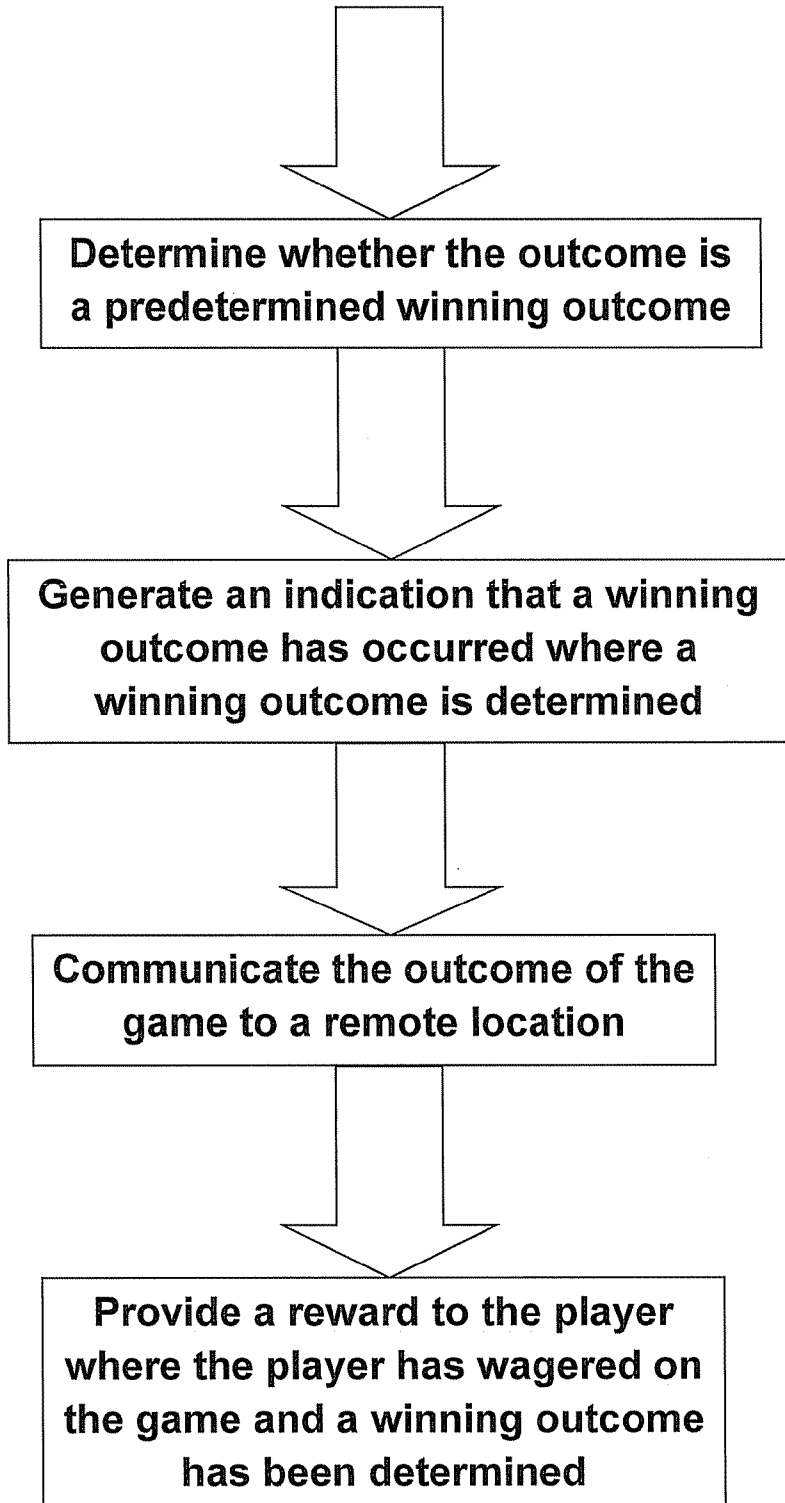


Fig. 2



**Fig. 3**



**Fig. 3 (Con't)**

**GAMING MACHINE WITH HORIZONTAL SCROLLING AND MATCHING**

DETAILED DESCRIPTION

CROSS REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Patent Application Ser. No. 61/551,559 filed Oct. 26, 2011, the entirety of which is incorporated herein by reference.

FIELD

[0002] The invention pertains to a game machine and method of play. More particularly, the invention pertains to such machines and methods which implement a game featuring horizontal scrolling and matching of game elements.

BACKGROUND

[0003] Gaming machines for playing a matching game of vertically scrolling game elements are generally known and have been relatively popular for a number of years. Typical slot machines are an example of such gaming machines. As is customary with such machines, a plurality of adjacent reels (if mechanical) or displays (if electronic) are usually provided, with each reel/display generally having a number of different symbols or elements thereon. During play of such games, the reels/displays will rotate or scroll in a vertical direction and will eventually stop with the symbols or elements in different positions relative one or more horizontally designated game lines which span across the reels/displays. Usually, where a preselected collection of symbols appear in the same game line, a winning outcome is obtained.

[0004] As is generally known, the symbols featured in such games are usually discrete images or symbols which, although considered for matching purposes, generally do not have any collective visually representative effect across the one or more game lines. Thus, such games and gaming machines have certain limitations with regard to the visual presentation of possible outcomes. It is generally known that due to such limitations, player interest in such games can drop over a period of time which may result in certain individual players deciding to cease playing the game and/or decline to play such machines again in the future. Hence there are ongoing needs to try to bring play variations to the audience of players in order to sustain their interest and desire to continue playing.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] FIG. 1A illustrates a first sample configuration of a game as displayed on a gaming machine in accordance herewith.

[0006] FIG. 1B illustrates a second sample configuration of a game with a winning outcome and indicator as displayed on a gaming machine in accordance herewith.

[0007] FIG. 1C illustrates the sample game configuration as shown in FIG. 2B with a second winning outcome and indicator as displayed on a gaming machine in accordance herewith.

[0008] FIG. 2 is a block diagram of a gaming machine in accordance herewith.

[0009] FIG. 3 is a flowchart showing a method in accordance with embodiments of the subject invention.

[0010] While this invention is susceptible of embodiment in many different forms, there are shown in the drawings and will be described herein in detail specific embodiments thereof with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the specific embodiments illustrated. Specifically, although embodiments described herein are set forth for use in connection with a gaming unit of the type usually referred to as a "slot machine," the subject embodiments are not limited to such and can be applied for use in connection with any game system, without limitation. Such systems can include, for example, coin-operated amusement devices, bar-top amusement devices, home gaming systems, video poker machines, or any other appropriate system.

[0011] Embodiments disclosed herein provide a more entertaining gaming experience by providing a gaming machine and method with a new and more visually appealing visual presentation in connection with a matching game whereby the individual game elements can form contiguous images across the game positions. Embodiments additionally provide for a gaming machine with horizontal scrolling of gaming elements that are integrated into a gaming experience in which horizontal scrolling is appropriate, such as for example, to generate and display vertically oriented images of figures, objects, structures and/or symbols across a plurality of horizontal segments. It will be recognized that by integrating such a new machine and method of play into familiar archetypes will allow players to easily understand the new gaming experience and provide an improved and sustained interest in playing the game. It will be further recognized that such presentation heightens a player's enjoyment of the game and will induce a player to continue playing the game and/or select the game over other competing games in the future. Other objects, benefits and advantages of the invention will become apparent in the following disclosure.

[0012] With reference now to the figures, a gaming machine 10 is illustrated for playing a game featuring horizontal scrolling and matching of game elements. FIGS. 1A through 1C illustrate exemplary configurations of the game as played on the gaming machine 10 according to embodiments of the subject invention. As shown, the game machine can feature one or more arrays 22 displaying an assortment of game elements 30 which can be chosen from a superset of possible elements. According to the embodiments shown in FIGS. 1A through 1C, the array 22 can have a plurality of substantially vertical columns or game positions 32 and a plurality of horizontal segments 34 that span across the game positions 32. As shown, each horizontal segment 34 contains at least one game element 30, and preferably multiple game elements 30.

[0013] It will be recognized that although the array 22 of the illustrated embodiments has five columns or game positions 32 and three horizontal segments 34, other combination of game positions 32 or horizontal segments 34 can be provided in accordance with the subject invention. In addition, although the game positions 32 are shown in FIGS. 1A-1C as having a substantially vertical orientation, they can be alternatively configured, such as for example in a diagonal orientation, without departing from the novel scope of the present invention.

[0014] During play of the game, individual game elements 30 on a horizontal segment 34 are horizontally variable rela-



tive to the game positions 32 and/or the elements 30 on the other horizontal segments 34. During the game, such horizontal variation can form a plurality of individual contiguous subsets 40a, 40b . . . 40n at one or more of the game positions 32.

[0015] FIGS. 1A through 1C show the individual contiguous subsets 40a, 40b . . . 40n displayed in a substantially vertical configuration in the respective game positions 32. According to such embodiments, each individual contiguous subset 40 is shown to be stylized human or fantastic figure which has been divided into three horizontal sections 42a, 42b, 42c. As is shown, the horizontal sections 42a, 42b, 42c of the FIG. 40 roughly corresponding to the head, the torso and upper limbs, and the hips and lower limbs.

[0016] Each horizontal section 42a, 42b, 42c is displayed in a corresponding horizontal segment 34 of one of the game positions 32. Persons of ordinary skill in the art will understand that although FIGS. 1A-1C show the individual contiguous subsets 40 being human figures formed by elements 30 that are illustrative of segments of such figures, alternative elements 30 can be used to form contiguous subsets 40 having alternative forms, such as for example animals, shapes, letters, symbols, structures, or any other known or generally recognizable article, without departing from the novel scope of the subject invention.

[0017] As illustrated in FIGS. 1A-1C, it is generally preferred, but not required, that the individual contiguous subsets 40a, 40b . . . 40n be divided into the same number of horizontal sections 42a, 42b, 42c as the vertical columns 32 are divided into horizontal segments 34. It is further generally preferred, but not required, that the relative spatial orientation of the horizontal sections 42a, 42b, 42c of the FIG. 40, be analogous to the spatial orientation of the horizontal segments 34, such that, for example, where the game features elements 30 forming a human figure, a horizontal section 42a containing a head be displayed in the uppermost horizontal segment 34, a horizontal section 42b containing a torso and upper limbs be displayed in a central horizontal segment 34, and a horizontal section 42c containing the hips and lower limbs be displayed in the lowermost horizontal segment 34. Such configuration allows each vertical column or game position 32 to display matching contiguous subsets 40a, 40b . . . 40n having a generally recognizable appearance, or in the case where the horizontal sections 42 do not align to create an complete individual subset, the player will be able to easily recognize that the game has resulted in a subset of whimsically mismatched horizontal sections 40.

[0018] It will be understood that during play of the game, the horizontal segments 34 can be moved in a horizontal direction either physically or through computationally equivalent display. It will be further understood that either the horizontal sections 42 selected to fill the horizontal segments 34 be randomly assigned during movement or that if the selections are fixed, that the horizontal sections 42 move at different rates so that the relative vertical orientation of individual horizontal sections 42 changes between pulls.

[0019] It will be recognized by those of ordinary skill in the art that the invention can be practiced either as a mechanical device by using "reels" or other spinning mechanisms which are oriented in a horizontal manner, or by using a video display controlled by a computer which electronically displays the elements 30 of the horizontal segments 34 moving in a horizontal manner relative the vertical columns or game positions 32. In addition, while embodiments can incorporate

both a simple horizontal and a multidimensional movement in a mechanical device, it is preferred, but not required, to practice the invention as a video display controlled by a computer unit. In accordance with such embodiments, the present invention can provide infinitely variable motion and varied game elements, which could incorporate the elements of traditional slot machine play to the desired degree. Such embodiments could further incorporate the invention's teaching of horizontal and diagonal element movement and further allow players to easily exercise some form of skill to control or influence the outcome of any particular game by programming input opportunities for players based on memory, dexterity, knowledge, or any other player skill or combination of skills.

[0020] As set forth in more detail below, embodiments of the subject invention provide that, where a matching contiguous subset 40 is formed at a single game position 32, said configuration can be representative of a predetermined winning outcome. Whereas, where a contiguous subset 40 of mismatched horizontal sections 32 is formed at a single game position, said configuration is representative of a predetermined non-winning outcome.

[0021] According to such embodiments, FIG. 1A illustrates a first configuration of the game in which none of the vertical columns 32 display a matching individual contiguous subset. As shown, the upper, middle, and lower horizontal segments 34 of the figures in each column or game position 32 do not correspond to produce one complete figure with consistent horizontal sections 40. Thus whimsically mismatched figures are produced in each column or game position 32 which are composed of random and non-matching elements 30.

[0022] FIG. 1B illustrates a second configuration of a game with a winning configuration according to embodiments of the subject invention. As shown, the second column from the viewer's left contains a matching contiguous subset 40b of corresponding elements 30 in each of the horizontal segments 34. Specifically, the horizontal segments 42 in each segment 34 contain part of the same stylized figure, thus generating a complete and correct contiguous subset 40 in the second column or game position 32.

[0023] According to embodiments, where this configuration corresponds to a predetermined winning outcome, as shown in FIG. 1B, the array 22 can generate a winning symbol or indicia 44, such as for example a graphic bubble, to indicate to the player that a winning outcome has resulted. The symbol or indicia can further contain additional information such as the amount of reward that has been won by achieving the particular winning outcome. In addition, the gaming machine can produce other non-visual indicia, such as for example an alarm, chime or bell to audibly alert the player that a winning outcome has resulted.

[0024] In addition to the primary game elements 30 displayed on the array 22, embodiments of the subject invention additionally provide for the display of secondary indicia 48 that can contribute to the outcome of the game where additional winning outcomes are desired. FIG. 1C illustrates a game configuration according to such embodiments. As shown in FIG. 1C, the configuration of game elements 30 is the same as shown in FIG. 1B, however, according to this embodiment, a winning outcome has resulted based on an alignment of secondary indicia 48. Specifically, in addition to displaying a portion of a stylized figure, each horizontal section 42 displays a background color 48.

**[0025]** As shown in FIG. 1C, the background color **48** of all horizontal sections **42** in the middle horizontal segment **34** is the same (pink). Such alignment of secondary indicia (e.g. color) **48** can result in an alternative or additional winning outcome according to embodiments of the subject invention. Where the alignment of secondary indicia **48** has resulted in a winning outcome, indication **46** can be generated to alert the player that a winning outcome has resulted. FIG. 1C shows an example of such indication **46** as a bubble or graphic containing the words “Color Connect” and the amount of the wager won—“1,250 credits.”

**[0026]** Although, FIG. 1C illustrates the winning combination to be formed by horizontal alignment of such secondary indicia **48**, it can be additionally possible to assign a winning outcome to alternative configurations, such as for example, vertical or diagonal alignment of the secondary indicia **48** or in all four corners of the array, or by assigning a winning outcome to patterns of two different secondary indicia **48**, such as where two background colors **48** appear in alternating horizontal sections **34**. In addition, although the use of background color **48** can be visually appealing and easy for the player to understand, persons of ordinary skill in the art will understand that embodiments of the subject invention can have secondary indicia **48** with alternative forms, such as for example, secondary elements, or background symbols or patterns, without departing from the novel scope of the subject invention.

**[0027]** FIG. 2 illustrates additional components of the gaming machine **10** according to embodiments of the subject invention. As shown in FIG. 2, the gaming machine **10** can have a computer **12**, at least one game display **22** and control array **24**. The computer **12** can have a programmable processor **14**, memory **16**, a storage unit **18** and user interface **20**. In addition, the memory **16** can include a main memory containing dynamic information processed by the programmable processor **14** during operation, and/or a static memory which contains fixed information, such as an operating system, game programs, and configuration information necessary for the processor **14** to consistently process input from the player through the control array **18**.

**[0028]** Embodiments of the subject invention further provide that the control array **24** can be a keyboard, a touchscreen, buttons or pads and/or any other means for control or desired combination of controls able to accept input from a player and produce output to the game display **22** in response to a player’s input. Additionally, as illustrated in FIG. 2, the gaming machine **10** can incorporate one game display **22** or multiple game displays **22a**, **22b** without departing from the novel scope of the invention.

**[0029]** The gaming machine **10** can additionally have communication means **26** for incorporating the subject invention into a larger system of games which can be configured to communicate with each other, allow play against other players, or form a competition or a cooperative of competing teams rather than an exercise of individual chance or skill. Such communication means can be a communication interface **26** for communicating with other gaming machines or networked gaming system via wired or wireless media.

**[0030]** While there are any number of potential means for evaluating the outcome of a game, the computer unit **12** can contain within its static memory **16** either an algorithm for examining a particular outcome against a fixed set of rules to determine whether it is a winning outcome, or a list of all possible winning outcomes against which the particular out-

come of a game can be compared. The computer **12** can additionally determine the outcome of a particular game using the rules stored in the static memory **16**, and further recognize the outcome as a particular individual outcome.

**[0031]** FIG. 3 illustrates a method in accordance with embodiments of the subject invention. As is typical in the art, the game can start from some first configuration, typically the configuration produced by the particular individual outcome of the prior game. In playing the game, a player engages the controls on the gaming machine’s **10** control array **24** and causes the horizontal segments **34** on the array **22** to move relative to each other, producing new relative orientations of new horizontal sections **42**. Each time this is done is referred to as a “pull” for purposes of this application. For each pull, the player can place a wager on the outcome of the game. At the end of each pull, the vertical columns or positions **32** are evaluated to see if the horizontal sections **42** form a winning configuration.

**[0032]** It is preferred that winning configurations be related to the visual appearance and relationship of the horizontal sections **42**. For instance, as illustrated in FIGS. 2B and 2C, if the horizontal sections **42** in a given vertical column **32** are all from the same stylized figure, this could be a winning configuration. FIGS. 1B and 1C illustrate such a winning configuration **40b** according to this embodiment. In addition, other reasonable relationships can also produce winning configurations. For example, according to various embodiments, a winning configuration can be produced where all of the horizontal sections **42** in a single column or game position **32** are from a male figure, though not necessarily the same male figure.

**[0033]** Thus, embodiments disclosed herein include a gaming machine with horizontal scrolling and matching. The gaming machine features an array of multiple game positions each having a plurality of horizontal segments. Each horizontal segment has at least one element selected from a first plurality of possible elements to form a plurality of individual contiguous subsets across the horizontal segments. The plurality of individual contiguous subsets has both winning and non-winning configurations. During play of the game, the elements of at least one horizontal segment are variable relative each game position to form an individual contiguous subset across the horizontal segments at each game position. If the contiguous subset is one which is recognized as a predetermined winning configuration, a winning outcome is achieved and the player wins a prize.

**[0034]** From the foregoing, it will be observed that numerous variations and modifications may be effected without departing from the spirit and scope of the invention. It is to be understood that no limitation with respect to the specific apparatus illustrated herein is intended or should be inferred. It is, of course, intended to cover by the appended claims all such modifications as fall within the scope of the claims.

**[0035]** Further, logic flows depicted in the figures do not require the particular order shown, or sequential order, to achieve desirable results. Other steps may be provided, or steps may be eliminated, from the described flows, and other components may be added to, or removed from the described embodiments.

What is claimed is:

1. A gaming machine for playing a game, the machine comprising:
  - an array having multiple game positions each comprised of a plurality of horizontal segments, each horizontal seg-

ment having at least one element selected from a first plurality of possible elements, the plurality of possible elements forming a second plurality of individual contiguous subsets across the horizontal segments, the plurality of individual contiguous subsets having both winning and non-winning configurations; and during play of the game the elements of at least one horizontal segment being variable relative each game position to form an individual contiguous subset across the horizontal segments at each game position.

2. The gaming machine of claim 1 wherein the plurality of game positions are oriented in a substantially vertical configuration.

3. The gaming machine of claim 1 wherein the plurality of game positions are adjacent each other.

4. The gaming machine of claim 1 wherein during play of the game the elements of each horizontal segment are variable relative each game position.

5. The gaming machine of claim 1 wherein the individual contiguous subsets are divided into horizontal sections that correspond in number to the horizontal segments.

6. The gaming machine of claim 5 wherein the horizontal sections are arranged relative the horizontal segments so as to produce individual contiguous subsets having a visually recognizable orientation at each game position such that elements representative of an upper portion of a contiguous subset are arranged in a top horizontal segment, elements representative of a lower part of a contiguous subset are arranged in a bottom horizontal segment and elements representative of a middle part of a contiguous subset are arranged in a horizontal segment between the top and bottom horizontal segments.

7. The gaming machine of claim 6 wherein the individual contiguous subsets are formed by either a configuration of pre-determined corresponding elements or a configuration of pre-determined mis-matched elements.

8. The gaming machine of claim 7 wherein a configuration of corresponding elements is representative of a winning combination and a configuration of mis-matched elements is representative of a non-winning combination.

9. The gaming machine of claim 1 wherein each individual contiguous subset is a stylized figure representative of a person or animal.

10. The gaming machine of claim 1 wherein the horizontal segments have secondary indicia that are variable relative each game position during play of the game, the secondary indicia contributing to the game's outcome.

11. The gaming machine of claim 10 wherein the secondary indicia comprises a background color displayed behind the elements, the background color behind each element selected from a superset of possible colors.

12. The gaming machine of claim 10 wherein during play of the game the secondary indicia produce predetermined winning and non-winning configurations relative their arrangement at specific game positions.

13. The gaming machine of claim 12 wherein a predetermined winning configuration is designated as identical secondary indicia across a single horizontal segment.

14. The gaming machine of claim 12 wherein a predetermined winning configuration is designated as identical secondary indicia down a single game position.

15. The gaming machine of claim 1 further comprising means for indicating that a winning outcome is achieved.

16. The gaming machine of claim 15 wherein said means comprises a visual signal displayed on the array.

17. A method for playing a game having an array of multiple game positions formed by a plurality of horizontal segments, comprising:  
 presenting at least one element selected from a superset of possible elements on each horizontal segment of the array;  
 receiving player input at a control array to activate the game;  
 reorganizing the elements in a random manner;  
 forming a plurality of individual contiguous subsets across the horizontal segments at each game position on the array;  
 recognizing the individual contiguous subsets as a particular outcome against a fixed set of rules;  
 determining whether the outcome is a predetermined winning outcome; and  
 where a winning outcome has been determined, generating an indication that a winning outcome has occurred.

18. A method as in claim 17 further comprising communicating the outcome of the game to a system of electrically connected game machines.

19. The method of claim 17 further comprising accepting a wager on the outcome of the game.

20. The method of claim 17 further comprising providing a reward to a player that has wagered on the game, where a winning outcome has been determined.

21. A gaming machine for playing a game, the machine comprising:  
 a computer;  
 a control array coupled to computer via the user interface;  
 a game array coupled to the computer, the game array having multiple game positions each comprised of a plurality of horizontal segments, each horizontal segment having at least one element selected from a superset of possible elements, the superset of possible elements forming a plurality of individual contiguous subsets across the horizontal segments, the plurality of individual contiguous subsets having both winning and non-winning configurations; and  
 during play of the game the elements of at least one horizontal segment being variable relative each game position to form an individual contiguous subset across the horizontal segments at each game position.

22. The gaming machine of claim 21 where the control array comprises a keyboard, mechanical lever, button or touch-screen.

23. The gaming machine of claim 21 where the game array comprises an electronic display.

24. The gaming machine of claim 21 further comprising a communication interface coupled to the computer, the communication interface suitable for communicating with other gaming machines via electronic signals.

25. The gaming machine of claim 24 where the communication interface communicates via wired or wireless signals.

26. The gaming machine of claim 21 further comprising means for providing a player with a reward.

27. The gaming machine of claim 21 where the computer has a programmable processor, a storage unit and a user interface