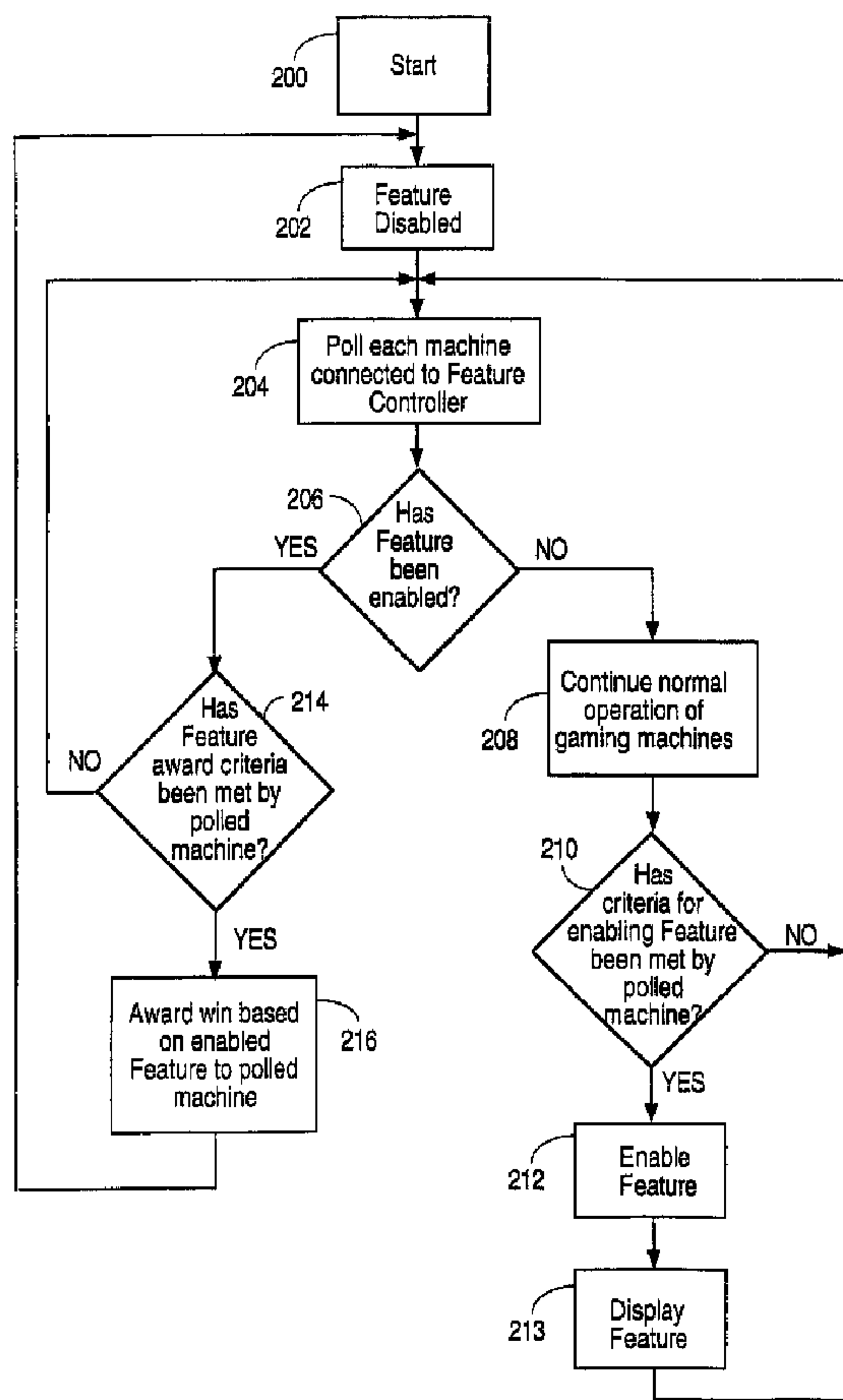




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(54) Titre : MACHINES A SOUS INTERCONNECTEES A CONTROLEUR COMMUN
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(57) Abrégé/Abstract:

The preferred embodiment of the present invention operates on a system of interconnected gaming machines. In a normal operation mode, the individual machines provide awards to individual players based on the generation of symbol combinations in a

(57) **Abrégé(suite)/Abstract(continued):**

first group of symbol combinations. The linked gaming machines are polled by a feature controller to determine whether symbol combinations in a second group of combinations are generated. These symbol combinations in the second group of combinations are accumulated until a level is reached such that a bonus award will be given to the next player whose machine generates a symbol combination within said second group of symbol combinations. The first machine to generate a winning symbol combination within said second group of symbol combinations is given a bonus award. The feature is then reset. The status of the feature is displayed for all players of the linked gaming machines.

ABSTRACT OF THE DISCLOSURE

The preferred embodiment of the present invention operates on a system of interconnected gaming machines. In a normal operation mode, the individual machines provide awards to individual players based on the generation of symbol combinations in a first group of symbol combinations. The linked gaming machines are polled by a feature controller to determine whether symbol combinations in a second group of combinations are generated. These symbol combinations in the second group of combinations are accumulated until a level is reached such that a bonus award will be given to the next player whose machine generates a symbol combination within said second group of symbol combinations. The first machine to generate a winning symbol combination within said second group of symbol combinations is given a bonus award. The feature is then reset. The status of the feature is displayed for all players of the linked gaming machines.

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LINKED GAMING MACHINES HAVING A COMMON FEATURE CONTROLLER

This application is a divisional application of Canadian Patent Application Serial No. 2,183,874, filed on February 21, 1995.

5 FIELD OF THE INVENTION

The present invention relates to electronic gaming devices. More particularly, the present invention relates to controlling features available to linked electronic gaming machines.

10 BACKGROUND OF THE INVENTION

Modern gaming machines are typically electronically controlled, as opposed to mechanically controlled. For example, U.S. Patent No. 4,095,795 to Saxton et al. discloses a slot machine having a computer
15 which randomly generates a series of numbers corresponding to stopping positions of each reel in the machine. After causing the reels to rotate for a period of time, the machine then stops the reels at their previously determined stopping positions.

20 This general type of computer controlled gaming machine allows similar gaming machines to be electronically linked together to share a common jackpot. This is because the final game results and the jackpot award can be electronically communicated between a central jackpot
25 controller and the various linked gaming machines. Progressive jackpot gaming systems, comprised of one or more interconnected gaming machines which award a progressive jackpot award, are well known. By allowing players to win a large progressive jackpot award in addition to the customary

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payout for winning combinations, the players enjoy a heightened interest and enthusiasm in the gaming machines. This heightened enthusiasm translates into

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higher revenue for gaming machine proprietors. U.S. Patent No. 4,837,728 to Barrie et al. describes one such progressive gaming system comprised of linked slot machines. The circuitry and software used to fabricate and operate these conventional linked gaming machines are well known to those skilled in the art.

SUMMARY OF THE INVENTION

The preferred embodiment of the present invention operates on a system of interconnected gaming machines. In a normal operation mode, the individual machines provide awards to individual players based on the generation of symbol combinations in a first group of symbol combinations. The linked gaming machines are polled by a feature controller to determine whether symbol combinations in a second group of combinations are generated. These symbol combinations in the second group of combinations are accumulated until a level is reached such that a bonus award will be given to the next player whose machine generates a symbol combination within said second group of symbol combinations. The first machine to generate a winning symbol combination within said second group of symbol combinations is given a bonus award. The feature is then reset. The status of the feature is displayed for all players of the linked gaming machines.

One aspect of the invention provides a method of operating a system of linked gaming machines in which an award is given based on an award criteria, said method comprising the steps of: generating during a period of time one or more combinations of symbols in one or more of said linked gaming machines; determining, based upon said one or more combinations of symbols generated during said period of

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time, whether a first criterion has been met for making a feature available to said linked gaming machines, said feature, when available to said linked gaming machines, operating to alter said award given by said linked gaming machines; making said feature available to said linked gaming machines after it has been determined that said first criterion has been met; generating one or more combinations of symbols in one or more of said linked gaming machines after said feature has been made available; comparing said one or more combinations of symbols generated after said feature has been made available to a predetermined award criterion to which said feature applies; giving an award by one or more of said linked gaming machines based upon whether said one or more combinations of symbols generated after said feature has been made available matches said predetermined award criterion; and making said feature not available to said linked gaming machines after it has been determined that a second criterion has been met.

There is also provided a system of linked gaming machines for giving an award based on an award criteria, said system comprising: a feature controller coupled to each of said linked gaming machines, said feature controller comprising a computer for determining when a feature is to be made available and not available to said linked gaming machines, based upon previous combinations of symbols generated by one or more of said linked gaming machines, wherein said feature operates to alter an award payable by said linked gaming machines; and a display device for displaying said feature when said feature is made available.

A further aspect of the invention provides a method of operating a system of linked gaming machines in which an award is given based on an award criteria, said method comprising the steps of: generating one or more

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combinations of symbols in one or more of said linked gaming machines; determining based upon previous combinations of symbols generated by one or more of said linked gaming machines whether a first criterion has been met for making a feature available to said linked gaming machines, said feature, when available to said linked gaming machines, operating to alter said award given by said linked gaming machines; making said feature available to said linked gaming machines after it has been determined that said first criterion has been met; displaying said feature, after said feature has been made available to said linked gaming machines, on one or more display devices observable by all players of said linked gaming machines prior to a next operation of any of said linked gaming machines by said players; generating, after said feature has been made available, one or more combinations of symbols in one or more of said linked gaming machines; comparing said one or more combinations of symbols generated after said feature has been made available to a predetermined award criterion to which said feature applies; giving an award by one or more of said linked gaming machines based upon whether said one or more combinations of symbols generated after said feature has been made available matches said predetermined award criterion; and making said feature not available to said linked gaming machines after it has been determined that a second criterion has been met.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 illustrates one embodiment of a circuit which may be used to implement the present invention.

Figure 2 is a flowchart which shows the basic

steps used in one embodiment of the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Figure 1 illustrates a linked gaming system 100
5 which incorporates the present invention. Other
circuitry for implementing the invention may also be
used. The system 100 includes linked gaming machines
101-108 (which may be conventional electronically
10 operated slot machines), multiplexer/de-multiplexer
circuit (MUX) 120, central processing unit (CPU) 122,
random access memory (RAM) 124, read only memory (ROM)
126, and output display device 128. MUX 120 may be
replaced with an address/data bus and suitable decoders
within the gaming machines 101-108 so that the gaming
15 machines 101-108 can be addressed using digital codes.
The circuit within the dashed line will be referred to
as a feature controller 110.

Linked gaming machines 101-108 transmit game
information to and receive feature information from
20 feature controller 110 through MUX 120 (or a suitable
address/data bus) via bi-directional communication
lines 111-118. Such game information may include
digital codes representing a final displayed
combination of symbols in a slot machine. Such digital
25 codes are normally generated in conventional slot
machines for addressing an award table stored in a
memory in the slot machine. CPU 122 controls MUX 120
and receives/transmits data from/to the gaming machines
101-108 via communication lines 121.

30 CPU 122, RAM 124, and ROM 126 are connected
together via communication lines 123 and control the
operation of gaming system 100. RAM 124 is used to
temporarily store data generated by CPU 122. CPU 122
is coupled to and controls output display 128 via lines
35 125. The operation of feature controller 110 is
controlled by a program stored in ROM 126. The

circuitry used in feature controller 110 to carry out the programmed instructions would be known by those skilled in the art after reading this disclosure.

Figure 2 is a flow chart illustrating an operation of a linked gaming system 100 in accordance with an embodiment of the present invention. Such an operation may be controlled by a program stored in ROM 126.

The system 100 is powered up in a start step 200. During normal operation of the gaming system 100, feature controller 110 disables one or more of the particular features under the command of the feature controller 110 (step 202). Gaming machines 101-108 may operate independently of each other during this normal operation mode and award wins based upon a normal payout criteria stored in either ROM 126 of feature controller 110 or in a memory (i.e., an award table) contained within each of the linked gaming machines. Feature controller 110 periodically polls each of the gaming machines 101-108, using MUX 120 (or an address/data bus) and using conventional polling techniques, for game results generated in each of the linked gaming machines (step 204). Polling may be performed by sequentially accessing the gaming machines 101-108 in the system and reading the current game results. If the feature has not yet been enabled (step 206) by the feature controller 110, gaming machines 101-108 continue normal operation (step 208).

In step 210, feature controller 110 compares the game results of each gaming machine 101-108 polled to feature enabling criteria stored in ROM 126 (or elsewhere) to determine whether one or more predetermined features should be enabled. The feature enabling criteria may consist of any of a variety of conditions. For example, in one embodiment, a criterion for enabling the feature may be a specified number of occurrences of a predetermined combination of

indica displayed by the gaming machines 101-108. Thus, for example, the feature may be enabled for a system of linked slot machines when four like symbols have been displayed a total of four times by the linked slot
5 machines.

If the feature controller 110 determines in step 210 that the feature enabling criteria has not meet met (e.g., the game results indicate that four-of-a-kind have not yet been generated four times by linked gaming
10 machines 101-108), the feature remains disabled and the linked gaming machines 101-108 are again polled (step 204). Steps 204, 206, 208, and 210 are repeated until the game results generated by one or more of linked gaming machines 101-108 meet the feature enabling
15 criteria.

If the feature enabling criteria has been met (step 210) by the game results, feature controller 110 enables the feature (step 212), and this enabled feature is now prominently displayed (step 213) by
20 output display 128 to attract new players and heighten excitement. At this point, the feature is made available to all linked gaming machines 101-108. The various players now play the gaming machines 101-108 having the enabled features. Feature controller 110
25 again polls each of linked gaming machines 101-108 (step 204) and, with the feature now enabled (step 206), determines whether the feature award criteria stored in ROM 126 has been met by any of the polled machines (step 214). Feature controller 110 then
30 awards a win, based upon the enabled feature, to the first linked gaming machine to generate a game result which matches the feature award criteria (step 216). In one embodiment, the feature operates to double the award normally associated with a certain game result
35 (e.g., four-of-a-kind).

Instead of the feature controller 110 determining

a win based on the polled game results and communicating the award amount to the gaming machine, feature controller 110 could modify the award table in each of the gaming machines 101-108, via communication lines 111-118, to reflect the enable feature. The gaming machine would then compare its game result to the award table and then provide a corresponding award. In this embodiment, feature controller 110 would still poll the various gaming machines to determine whether the feature should be enabled or disabled in the various award tables.

After a match is found and a win awarded (step 216) in accordance with the feature, the feature is then disabled (step 202) and all linked gaming machines 101-108 return to normal operation. Gaming machines 101-108 will remain in normal operation until feature controller 110 again enables the feature (step 212).

If no game result of linked gaming machines 101-108 matches the feature award criteria, steps 204, 206, and 214 are repeated until one of linked gaming machines 101-108 is awarded a win based upon the feature. In another embodiment, the feature is automatically disabled after a period of time. This period of time may be displayed by display 128.

In accordance with the present invention, both the feature award criteria and the feature enabling criteria may embody various conditions in addition to those previously discussed. For instance, in some embodiments the feature enabling criteria stored in ROM 126 (or elsewhere) may be a predetermined lapse of time between periods during which the feature has been disabled; for example, feature controller 110 may enable the feature 10 minutes after the feature was last disabled.

To attract more non-player interest in the gaming machines, the feature enabling criteria may be a

predetermined lapse of time during which one or more of linked gaming machines 101-108 has not been played. And in yet another embodiment, the feature is enabled in a purely random manner.

5 Similarly, the feature award criteria stored in ROM 126 may take on many forms. For example, the feature award criterion may be the display by one of the linked gaming machines 101-108 of a certain combination of symbols (e.g., four-of-a-kind), in which
10 case the feature will award an enhanced amount (i.e., a bonus). The feature may even offer the gaming machine players a greater variety of winning possibilities, thereby increasing player interest in the linked gaming system 100. Hence, the feature award criteria may be a
15 special or randomly chosen combination of symbols which will incur an enhanced award being given to the player. In another embodiment, the feature may provide a more nonconventional award by the linked gaming device meeting the feature award criteria, such as free game
20 credits or other prizes.

 It is to be understood that the embodiments described above as applied to linked gaming machines which display symbols on drums or reels can also be applied to machines in which the indicia are displayed
25 on video screens, as well as to other video displayed games, including but not limited to poker gaming machines, blackjack gaming machines, and roulette gaming machines.

 While particular embodiments of the present
30 invention have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from this invention in its broader aspects and, therefore, the appended claims are to encompass within their scope all
35 such changes and modifications as fall within the true spirit and scope of this invention.

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CLAIMS:

1. A method of operating a system of linked gaming machines in which an award is given based on an award criteria, said method comprising the steps of:

5 generating during a period of time one or more combinations of symbols in one or more of said linked gaming machines;

determining, based upon said one or more combinations of symbols generated during said period of
10 time, whether a first criterion has been met for making a feature available to said linked gaming machines, said feature, when available to said linked gaming machines, operating to alter said award given by said linked gaming machines;

15 making said feature available to said linked gaming machines after it has been determined that said first criterion has been met;

generating one or more combinations of symbols in one or more of said linked gaming machines after said
20 feature has been made available;

comparing said one or more combinations of symbols generated after said feature has been made available to a predetermined award criterion to which said feature applies;

25 giving an award by one or more of said linked gaming machines based upon whether said one or more combinations of symbols generated after said feature has been made available matches said predetermined award criterion; and

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making said feature not available to said linked gaming machines after it has been determined that a second criterion has been met.

2. The method of claim 1 further comprising the step
5 of displaying said feature on one or more display devices when said feature is available to said linked gaming machines.

3. The method of claim 1 wherein said feature is made
available to said linked gaming machines when a
10 predetermined number of said combinations of symbols generated during said period of time match said first criterion.

4. The method of claim 1 wherein said predetermined
award criterion is a specified combination of symbols
15 displayed by one or more of said linked gaming machines.

5. The method of claim 1 wherein said feature is made
available to said linked gaming machines after a
predetermined number of occurrences of a specified
combination of symbols displayed by said linked gaming
20 machines.

6. The method of claim 1 wherein said feature
multiplies an award normally given for a certain game result
by a predetermined factor, said predetermined factor being a
number greater than 1.

25 7. The method of claim 1 wherein said feature provides additional winning combinations for said linked gaming machines.

8. The method of claim 1 wherein, after said feature
is made available to said linked gaming machines, said
30 feature is made not available after one of said linked

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gaming machines has generated a combinations of symbols which meets said predetermined award criterion to which said feature applies.

9. The method of claim 1 wherein, after said feature
5 is made available to said linked gaming machines, said feature is made not available after a period of time.

10. The method of claim 1 wherein, after said first
criterion has been met, said feature is made available to
each of said linked gaming machines prior to a next
10 operation of any of said linked gaming machines by any
players of said linked gaming machines.

11. The method of claim 1 wherein said feature is made
available to all of the linked gaming machines forming said
system of linked gaming machines once said first criterion
15 has been met.

12. A system of linked gaming machines for giving an
award based on an award criteria, said system comprising:

a feature controller coupled to each of said
linked gaming machines, said feature controller comprising a
20 computer for determining when a feature is to be made
available and not available to said linked gaming machines,
based upon previous combinations of symbols generated by one
or more of said linked gaming machines, wherein said feature
operates to alter an award payable by said linked gaming
25 machines; and

a display device for displaying said feature when
said feature is made available.

13. The system of claim 12 wherein said feature
controller makes said feature available to said linked

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gaming machines when a predetermined number of game results match a first criterion.

14. The system of claim 12 wherein said feature controller makes said feature available to said linked
5 gaming machines at a predetermined time interval.

15. The system of claim 12 wherein said feature controller makes said feature available to said linked gaming machines at a random time interval.

16. The system of claim 12 wherein said feature
10 controller temporarily makes said feature available for a first predetermined period of time.

17. The system of claim 12 wherein, after said feature is made available to said linked gaming machines, said feature is made not available after one of said linked
15 gaming machines has generated a combinations of symbols which meets a predetermined award criterion to which said feature applies.

18. The system of claim 12 wherein said feature provides additional winning combinations for said linked
20 gaming machines.

19. The system of claim 12 wherein said feature multiplies an award normally given for a certain game result by a predetermined factor, said predetermined factor being a number greater than 1.

25 20. The system of claim 12 wherein said feature, when made available to said linked gaming machines, is made available to all the linked gaming machines forming said system of linked gaming machines.

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21. A method of operating a system of linked gaming machines in which an award is given based on an award criteria, said method comprising the steps of:

generating one or more combinations of symbols in
5 one or more of said linked gaming machines;

determining based upon previous combinations of symbols generated by one or more of said linked gaming machines whether a first criterion has been met for making a feature available to said linked gaming machines, said
10 feature, when available to said linked gaming machines, operating to alter said award given by said linked gaming machines;

making said feature available to said linked gaming machines after it has been determined that said first
15 criterion has been met;

displaying said feature, after said feature has been made available to said linked gaming machines, on one or more display devices observable by all players of said linked gaming machines prior to a next operation of any of
20 said linked gaming machines by said players;

generating, after said feature has been made available, one or more combinations of symbols in one or more of said linked gaming machines;

comparing said one or more combinations of symbols
25 generated after said feature has been made available to a predetermined award criterion to which said feature applies;

giving an award by one or more of said linked gaming machines based upon whether said one or more combinations of symbols generated after said feature has

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been made available matches said predetermined award criterion; and

making said feature not available to said linked gaming machines after it has been determined that a second
5 criterion has been met.

22. The method of claim 21 wherein said feature is made available to said linked gaming machines at a predetermined time interval.

23. The method of claim 21 wherein said feature is
10 made available to said linked gaming machines at a random time interval.

24. The method of claim 21 wherein said feature is made available to said linked gaming machines when one or more of said linked gaming machines has not generated said
15 game results for a predetermined period of time.

25. The method of claim 21 wherein said feature is made available to all of the linked gaming machines forming said system of linked gaming machines once said first criterion has been met.

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PATENT AGENTS

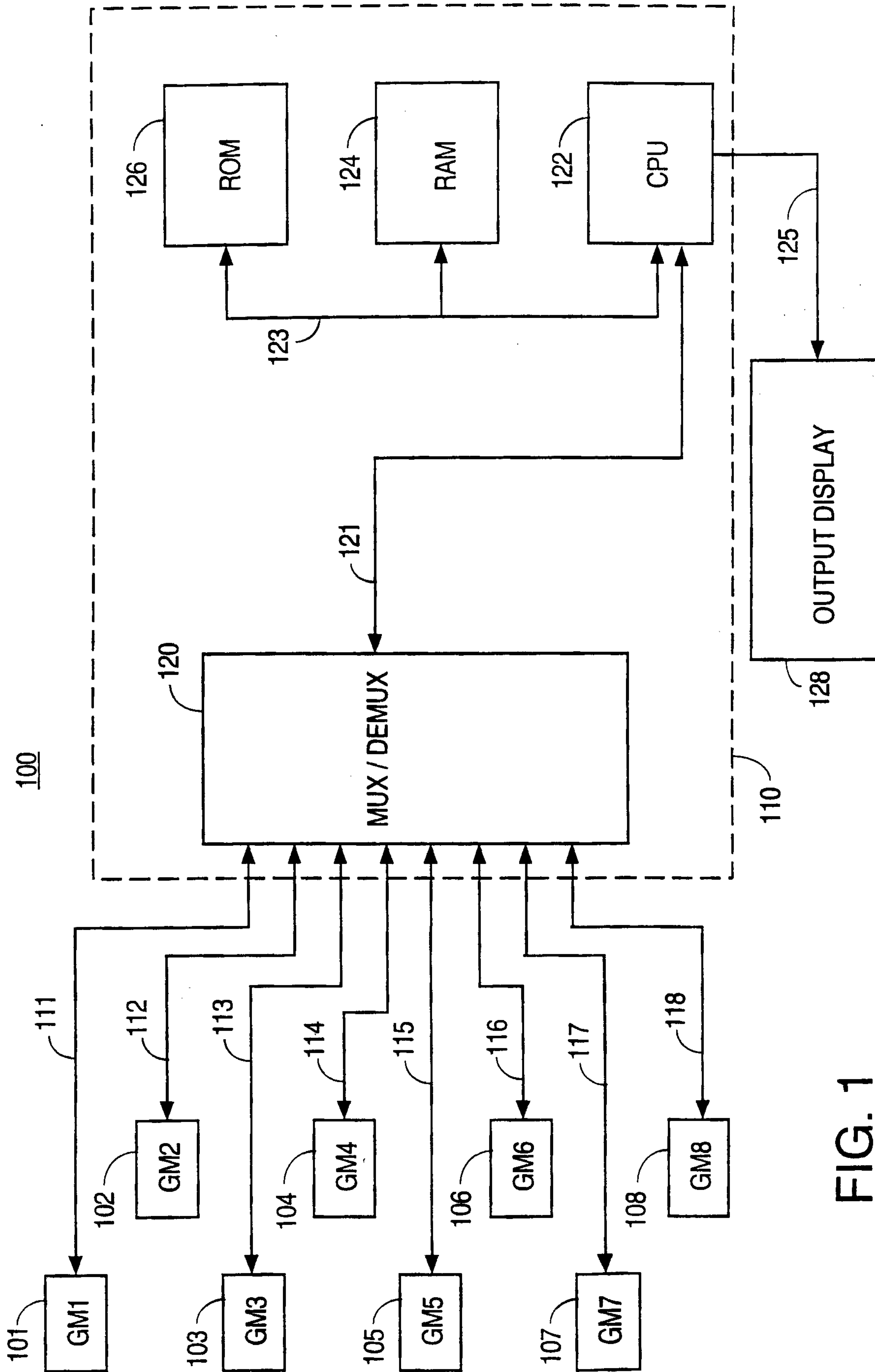


FIG. 1

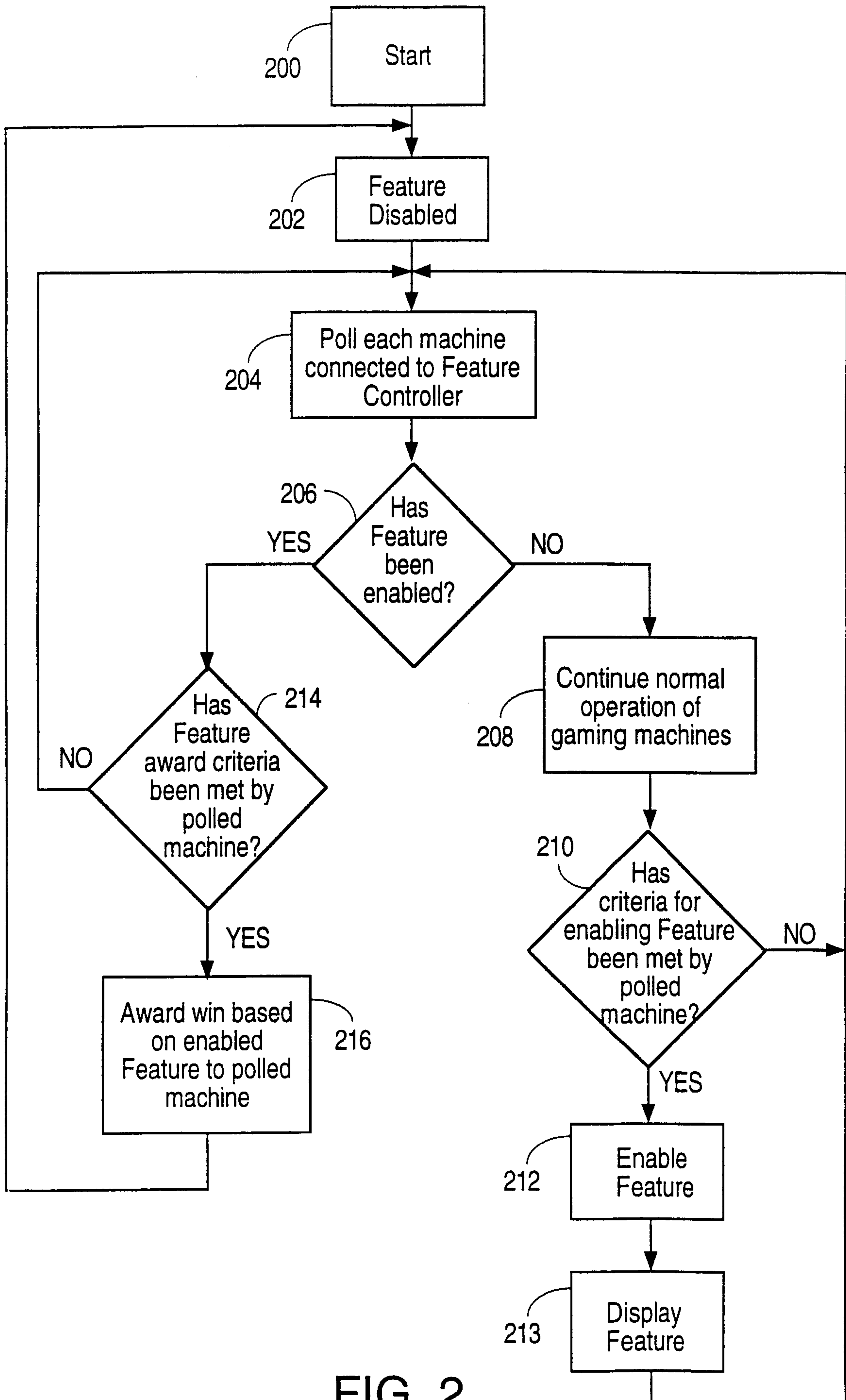


FIG. 2
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