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Description

This invention relates to entertainment machines of the kind, hereinafter referred to as the kind defined, which can be operated by a player at the start of a game, after actuation of a coin or token mechanism of the machine, to initiate performance of first machine operations represented by changing of visually displayed symbols, by progression through predetermined series of symbols, respectively at a plurality of display regions on the machine, such first operations terminating at random at the end of the game in a combination of fixed visual displays of selected said symbols at such regions, and which is arranged to perform further operations resulting in a win indication in the event that said combination of selected symbols at the end of the game is of a predetermined nature.

With an entertainment machine of the kind defined which is a fruit machine and utilises a plurality of rotatable reels with symbols (such as pictures of fruit) around the periphery of same to provide the visual displays, it is known to provide "nudge" controls which are rendered operable at the end of some (randomly selected) games and can then be actuated by the player to effect limited indexing of one or more of the reels such as to change the symbols displayed therewith. In this way the player can try to convert a losing combination of symbols into a winning combination by the exercise of skill.

This known nudge feature is generally popular. However, in some cases, especially where a player is not specially skilful in the use of the nudge controls the known nudge feature may present little attraction or may even detract from the entertainment value of the machine insofar as the player may not feel able to take full advantage of the opportunity for improving his position with which he is presented.

British Patent 1,292,712 describes the well-known nudge feature and also refers to an embodiment in which a reel is moved automatically through one position to bring a special symbol on to a win line whenever such symbol is found to be immediately above the win line at the end of a game. U.S. Patent 4,241,920 also describes automatic stepping of a reel through one position at the end of a game, although in this case the stepping is initiated on a random basis.

With both of these prior Patents the need for exercise of player skill is obviated but, correspondingly, there is little additional entertainment value to be derived since in each case the reel adjustment effected, unlike the case with the player-operated nudge facility, in effect constitutes no more than a further random machine operation.

An object of the present invention is to provide a machine of the kind defined with which the player can be provided with an opportunity of improving the combination obtained in an entertaining manner without requiring such player to exercise special expertise or skill.

According to the invention therefore there is provided an entertainment machine which can be operated by a player at the start of a game, after actuation of a coin or token mechanism of the machine, to initiate performance of first machine operations in which a control unit effects changing of visually displayed symbols by stepping through predetermined series of symbols, respectively at a plurality of display regions on the machine, such first operations terminating at random at the end of the game in a combination of fixed visual displays of selected said symbols at such regions, and which is arranged to perform further operations resulting in a win indication in the event that said combination of selected symbols at the end of the game is of a predetermined winning nature as determined by a win-assessing device, an adjustment operation being made available in at least some games whereby said combination can be adjusted by stepwise changing of one or more of the selected symbols characterised in that an adjustment device is provided which is operable, when actuated, to carry out said adjustment operation wholly automatically, said adjustment device being capable of changing a plurality of said symbols by a plurality of steps during said adjustment operation, and said adjustment device being operatively connected to said control unit in conjunction with said win-assessing device so that said changing is arranged to be automatically arrested in said adjustment operation in the event that the said adjusted combination constitutes a winning combination as determined by the win-assessing device.

With this arrangement, whenever said adjustment operation is made available and is brought into operation the player may be provided with an opportunity of improving the combination obtained, particularly by converting a non-winning combination into a winning combination, without requiring the exercise of special expertise or skill on behalf of the player, in a manner appreciably contributing to the entertainment value of the machine. The adjustment operation may become available at the end of a game i.e. after performance and termination of said first operations and before performance of said further operations. However, it is also possible for the said adjustment operation to be made available at the start of a game i.e. after actuation of the coin mechanism but before performance of said first operations (or even wholly or partially in substitution therefor).

Most preferably the machine of the invention is a fruit machine having a plurality (usually three or four) of rotatable reels with said symbols (such as pictures of fruit) around the peripheries thereof, and in this case winning combinations may require the presence of a plurality of symbols of the same kind and the said control device may be arranged to change the fixed display at one or some of the display regions to symbols thereof of like kind to the symbol displayed at a first one of the said display regions. However, it is to be

understood that the invention is not intended to be restricted to this kind of machine, and the machine of the invention may utilise moving members other than reels, or may utilise a changing display not involving moving members such as a changing pattern of illuminated lamps or a changing vdu display. Also, the display may involve symbols other than fruit and may involve any kind of winning combination thereof.

Most preferably the said automatic adjustment operation is made available in a predetermined and/or random manner at the start or end of some games only. When made available the said adjustment operation may be brought into operation automatically at the appropriate stage. Alternatively and preferably however the player is provided with some degree of choice in that, for example, the automatic adjustment operation comes into operation only after initiation thereof by a player-operable switch, or a player-operable cancel switch is provided to enable the player to cancel the automatic adjustment operation if desired. Further where such degree of choice is made available the machine may be provided with additional player-operable control devices such as nudge controls which can be used by the player at the end of the game as an alternative to the said automatic adjustment operation. In a particularly preferred embodiment the automatic adjustment operation is arranged to come into operation after initiation by a player-operable control switch and additional player-operable controls, such as nudge controls are provided for initiation of an alternative facility, the arrangement being such that operation of the said control switch renders inoperable the additional player-operable controls and *vice versa*.

The invention will now be described further by way of example only and with reference to the accompanying drawings in which:—

Figure 1 is a diagrammatic representation of a front panel of one form of a machine according to the present invention; and

Figure 2 is a diagrammatic representation illustrating the construction of such machine.

The machine is a fruit machine having three reels 1a, 1b, 1c, which are rotatable within a housing behind a window 2 in a front panel 3 thereof. Each reel 1 has pictures of fruit (designated A, B, C) at 20 positions around the periphery of same, and rotation of each reel is initiated and also arrested by a solenoid device 4 having a pawl engageable with teeth around the edge of the reel. Actuation of the solenoid 4 causes the pawl to be withdrawn from engagement with the teeth and to cause the reel 1 to rotate freely, and deactuation of the solenoid causes the pawl to drop back into engagement with the teeth to arrest the reel in one of 20 stopping positions thereof in which one of the pictures of fruit on the periphery of same is in precise registration with the window 2. Each stopping position is identified by a respective coded arrangement of holes in a side wall of the reel and the codes are read by a bank of photosensitive

devices 5 which receive light from a light source or sources through the holes.

In use, the machine is actuated by a player by insertion of one or more coins or tokens into a coin mechanism 6, and a starter button 7 is pressed to operate a control unit 8 which causes the three reels 1 to be set in rotation for different random periods of time. After the reels have come to rest, the stopping positions thereof are identified by the photosensitive devices 5 in conjunction with data processing circuitry 9 and a win indication is produced which may enable a pay-out mechanism 10 to be actuated by a pay-out button 13 in the event that the identified stopping positions correspond to the display of a predetermined winning combination of fruit (say three fruit of the same kind) through the window 2. Coins or tokens paid out are delivered to the player through an outlet 14.

Three control buttons 12a, 12b, 12c, are arranged respectively beneath the reels 1 on the front panel and at the end of some games, as selected on a random basis, one or more such buttons are rendered operable and are illuminated to indicate such operability to the player. These buttons 12 perform a conventional nudge function that is, the player can press the illuminated buttons one at a time to effect indexing of the associated reels with the aim of converting a non-winning combination into a winning combination. In accordance with conventional practice the arrangement may be such that the reels are movable stepwise one position at a time (or alternatively in a freely rotating manner) either in one direction only or selectively in either direction (in which case pairs of nudge buttons for forwards and backwards movement may be required) with an overall limitation being imposed on the scope of such movement (in terms of time period or overall number of reel positions changed).

In addition to the nudge buttons 12 the machine has on the front panel thereof an automatic adjustment button 15. This is rendered operable (and is illuminated whenever the nudge facility is made available). The button 15 and the buttons 12 are available for use optionally by the player. If the player decides to use the buttons 12 in the manner described above the button 15 is deactuated. Similarly operation of the button 15 deactuates the buttons 12. When the button 15 is operated an automatic adjustment mechanism 16 causes the position of one or more of the reels to be adjusted with the aim of changing the displayed combination of symbols on the winning line from the original losing combination to a new, winning combination, such change being effected automatically and without the involvement of the player. The operation of the mechanism 16 may be such that the attainment of a winning combination is guaranteed and this may be achieved in any suitable manner for example by moving one or two of the reels to positions at which a winning combination is completed with the displayed symbol of the or each

other reel. The attainment of a winning combination however need not be guaranteed and instead it is possible for there to be some limitation on the scope of adjustment of the reel positions (as by time period or overall number of positions adjusted) whereby such adjustment mechanism attempts to attain a winning combination but in some cases may be not capable of doing so.

With this arrangement if a player is not sufficiently confident of his expertise with the nudge buttons he can instead operate the adjustment mechanism when this facility is made available whereby he is provided with an opportunity of improving his position without having to exercise any skill in order to take advantage of such opportunity. On the other hand, if the player is confident of his skill he has the option of utilising the nudge buttons as an alternative to the adjustment button and this may be advantageous to the skilled player in so far as he may be able to obtain a winning combination of higher value than that which the adjustment mechanism would produce.

Adjustment of the reel positions with the adjustment mechanism may be achieved in any suitable manner. Thus, one or more of the reels (say the middle and last reel 1b, 1c) may be set in rotation and may continue rotating until the pertaining banks of photosensitive devices 5 determines that such reels 1b, 1c are at positions (or are about to attain positions) at which the fruit on same as displayed through the window 2 are the same as the displayed fruit of the first reel 1a. The reels 1b, 1c can then be arrested in this position. Alternatively, utilising knowledge of the sequence of symbols on the reels, the reels may be indexed stepwise through predetermined numbers of stopping positions with the aim of attaining the nearest or the highest value winning combination within a predetermined maximum number of index steps.

It is of course to be understood that the invention is not intended to be restricted to the details of the above embodiment which are described by way of example only. Thus, for example, the arrangement may be such that the adjustment feature when available comes into operation automatically after allowing a short period of time for the player to cancel the automatic adjustment by operating the nudge buttons (or by operating a cancel button which replaces the button 15).

Further, as an alternative to the use of the solenoids 4 and the code-reading sensors 5 it is possible to use, for example, respective stepper motors for driving the respective reels, and a position detection system which responds to and counts stopping positions from datum points on the reels (defined for example by light-sensitive devices which receive light through holes in the reels).

Still further, as an alternative to the use of reels it is possible to use a vdu display which stimulates the rotation of reels.

It is also to be understood that operation of the adjustment feature is not restricted to the end of a

game as described above. Instead it is possible for the adjustment feature to be made available at the start of a game possibly in conjunction with a "hold" facility. Thus, the arrangement may be such that the adjustment feature can be used at the start of a game and, in the event that a winning combination is thereby obtained this can be held to guarantee a payout. If a winning combination is not obtained the player can then play the game in the normal manner.

Claims

1. An entertainment machine which can be operated by a player at the start of a game, after actuation of a coin or token mechanism (6) of the machine, to initiate performance of first machine operations in which a control unit (8) effects changing of visually displayed symbols (A, B, C) by stepping through predetermined series of symbols, respectively at a plurality of display regions (2) on the machine, such first operations terminating at random at the end of the game in a combination of fixed visual displays of selected said symbols (A, B, C) at such regions (2), and which is arranged to perform further operations resulting in a win indication in the event that said combination of selected symbols (A, B, C) at the end of the game is of a predetermined winning nature as determined by a win-assessing device (5, 9), an adjustment operation being made available in at least some games whereby said combination can be adjusted by stepwise changing of one or more of the selected symbols characterised in that an adjustment device (16) is provided which is operable, when actuated, to carry out said adjustment operation wholly automatically, said adjustment device being capable of changing a plurality of said symbols (A, B, C) by a plurality of steps during adjustment operation, and said adjustment device (16) being operatively connected to said control unit (8) in conjunction with said win-assessing device (5, 9) so that said changing is arranged to be automatically arrested in said adjustment operation in the event that the said adjusted combination constitutes a winning combination as determined by the win-assessing device (5, 9).

2. A machine according to claim 1, characterised in that it is a fruit machine having a plurality of rotatable reels (1a, 1b, 1c) with said symbols (A, B, C) around the peripheries thereof.

3. A machine according to claim 1, characterised in that it is a fruit machine having a changing VDU display simulating the rotation of reels with said symbols (A, B, C) around the peripheries thereof.

4. A machine according to any one of claims 1 to 3, characterised in that said adjustment device (16) is actuated automatically when said adjustment operation is made available.

5. A machine according to any one of claims 1 to 3, wherein player-operable control devices (12a, 12b, 12c) are provided which can be used by the player at the end of the game to effect said

adjustment operation, characterised in that when the said adjustment device is made available for actuation, said control devices are made available as an alternative thereto.

6. A machine according to any one of claims 1 to 5, characterised in that said adjustment device (16) is operable always to attain a winning combination.

7. A machine according to any one of claims 1 to 5, characterised in that limitations are imposed on the operation of said adjustment device (16) such that it is not always ensured that said device (16) is able to attain a winning combination.

8. A machine according to claim 7, characterised in that said limitations comprise limitations on the number of symbol-changing steps.

Revendications

1. Machine de divertissement qui peut être actionnée par un joueur au départ d'un jeu, après actionnement d'un mécanisme à pièce de monnaie ou à jeton de la machine, afin d'amorcer l'accomplissement des premières fonctions de la machine dans lequel une unité de commande (8) effectue le changement de symboles affichés visuellement (A, B, C) par établissement pas à pas de séries de symboles prédéterminés respectivement dans plusieurs régions (2) d'affichage sur la machine, de telles premières fonctions se terminant au hasard à la fin du jeu en une combinaison d'affichages visuels desdits symboles choisis (A, B, C) dans lesdites régions (2), et l'unité de commande est aménagée pour accomplir des fonctions ultérieures aboutissant à une indication de gain dans le cas où ladite combinaison de symboles choisis (A, B, C) à la fin du jeu est du type gagnante comme déterminé par un dispositif (5, 9) de fixation de gain, une fonction d'ajustement étant offerte dans au moins certains jeux grâce à laquelle ladite combinaison peut être ajustée par une modification pas à pas de l'un ou de plusieurs des symboles choisis (A, B, C) caractérisée en ce que:

un dispositif d'ajustement (16) est prévu capable, quand il est actionné, d'exécuter de façon entièrement automatique ladite opération d'ajustement, ledit dispositif d'ajustement étant capable de modifier plusieurs desdits symboles (A, B, C) au moyen de plusieurs pas pendant l'opération d'ajustement, et ledit dispositif d'ajustement (16) étant relié de manière opérationnelle à ladite unité de commande (8) en conjonction avec ledit dispositif (5, 9) de fixation de gain de façon à ce que ledit changement est prévu pour être automatiquement arrêté au cours de ladite opération d'ajustement dans le cas où ladite combinaison ajustée constitue une combinaison gagnante comme déterminé par le dispositif (5, 9) de fixation de gain.

2. Machine selon la revendication 1, caractérisée en ce que ladite machine à pour symboles des fruits et comporte plusieurs rouleaux rotatifs (1a, 1b, 1c) ayant lesdits symboles (A, B, C) à leur périphérie.

3. Machine selon la revendication 1, caractérisée en ce que la machine a pour symboles des fruits et comporte une unité d'affichage video changeante, simulant la rotation de rouleaux ayant lesdits symboles (A, B, C) à leur périphérie.

4. Machine selon l'une quelconque des revendications 1 à 3, caractérisée en ce que ledit dispositif d'ajustement (16) est actionné de manière automatique lorsque ladite fonction d'ajustement est offerte.

5. Machine selon l'une quelconque des revendications 1 à 3, dans laquelle des dispositifs (12a, 12b, 12c) de commande utilisables par le joueur sont prévus avec la possibilité d'être utilisés par le joueur à la fin du jeu pour effectuer ladite opération d'ajustement, caractérisée en ce que lorsque ledit dispositif d'ajustement est offert, à l'utilisation, lesdits dispositifs de commande sont offerts comme une alternative à celui-ci.

6. Machine selon l'une quelconque des revendications 1 à 5, caractérisée en ce que ledit dispositif d'ajustement (16) est actionnable pour toujours aboutir à une combinaison gagnante.

7. Machine selon l'une quelconque des revendications 1 à 5, caractérisée en ce que des limites sont imposées à la fonction dudit dispositif d'ajustement (16) de manière à ce qu'il n'est pas toujours assuré que ledit dispositif (16) est capable d'aboutir à une combinaison gagnante.

8. Machine selon la revendication 7, caractérisée en ce que lesdites limites comprennent des limites quant au nombre de pas de changement de symbole.

Patentansprüche

1. Unterhaltungsmaschine, die ein Spieler bei Beginn eines Spiels nach Betätigung eines Münzen- oder Wertmünzenmechanismus (6) der Maschine in Gang setzen kann, um erste Maschinenoperationen einzuleiten, bei denen eine Steuerung (8) optisch dargestellte Symbole (A, B, C) durch Durchschalten festgelegter Serien von Symbolen bei mehreren Anzeigebereichen (2) der Maschine variiert, wobei diese ersten Operationen bei Spielende auf zufällige Art eine Kombination fester optischer Anzeigen ausgewählter Symbole (A, B, C) bei diesen Bereichen (2) ergeben, und bei der weiteren Operationen erfolgen, die eine Gewinnanzeige bewirken, wenn die erwähnte Kombination ausgewählter Symbole (A, B, C) bei Spielende nach Feststellung einer Gewinnprüfeinrichtung (5, 9) einer festgelegten Gewinnkombination entspricht, wobei eine Korrekturoperation bei wenigstens einigen Spielen verfügbar gemacht wird, um die erwähnte Kombination durch schrittweises Wechseln eines oder mehrerer der gewählten Symbole korrigieren zu können, gekennzeichnet durch eine Korrektoreinrichtung (16), die bei Betätigung die erwähnte Korrekturoperation vollautomatisch durchführen kann, wobei die erwähnte Korrektoreinrichtung mehrere der erwähnten Symbole (A, B, C) durch mehrere Schritte während der Korrekturoperation wechseln kann, und die er-

wähnte Korrektoreinrichtung (16) mit der erwähnten Steuerung (8) und der erwähnten Gewinnprüfeinrichtung (5, 9) zusammenwirkt derart, daß das erwähnte Wechseln bei der erwähnten Korrekturoperation automatisch beendet wird, sollte die erwähnte korrigierte Kombination nach Feststellung der Gewinnprüfeinrichtung (5, 9) eine Gewinnkombination darstellen.

2. Maschine nach Anspruch 1 dadurch gekennzeichnet, daß es sich um einen Spielautomaten handelt mit mehreren drehbaren Scheiben (1a, 1b, 1c), um deren Umfang die erwähnten Symbole (A, B, C) angeordnet sind.

3. Maschine nach Anspruch 1 dadurch gekennzeichnet, daß es sich um einen Spielautomaten handelt mit einer wechselnden Bildschirmanzeige, die die Rotation der Scheiben mit den erwähnten Symbolen (A, B, C) um den Umfang simuliert.

4. Maschine nach einem der Ansprüche 1 bis 3 dadurch gekennzeichnet, daß Betätigung der erwähnten Korrektoreinrichtung (16) automatisch bei Verfügbarmachung der erwähnten Korrekturoperation erfolgt.

5. Maschine nach einem der Ansprüche 1 bis 3 mit durch den Spieler betätigbaren Steuereinrichtungen (12a, 12b, 12c), über die der Spieler bei Spielende die erwähnte Korrekturoperation bewerkstelligen kann, dadurch gekennzeichnet, daß die erwähnten Steuereinrichtungen alternativ verfügbar gemacht werden, wenn die erwähnte Korrektoreinrichtung zur Betätigung verfügbar gemacht wird.

6. Maschine nach einem der Ansprüche 1 bis 5 dadurch gekennzeichnet, daß die erwähnte Korrektoreinrichtung (16) stets eine Gewinnkombination bewirken kann.

7. Maschine nach einem der Ansprüche 1 bis 5 dadurch gekennzeichnet, daß der erwähnten Korrektoreinrichtung (16) Funktionsbeschränkungen auferlegt sind derart, daß nicht immer gewährleistet ist, daß die erwähnte Einrichtung (16) eine Gewinnkombination erzielen kann.

8. Maschine nach Anspruch 7 dadurch gekennzeichnet, daß die erwähnten Beschränkungen Beschränkungen der Anzahl Symbolwechselschritte beinhalten.

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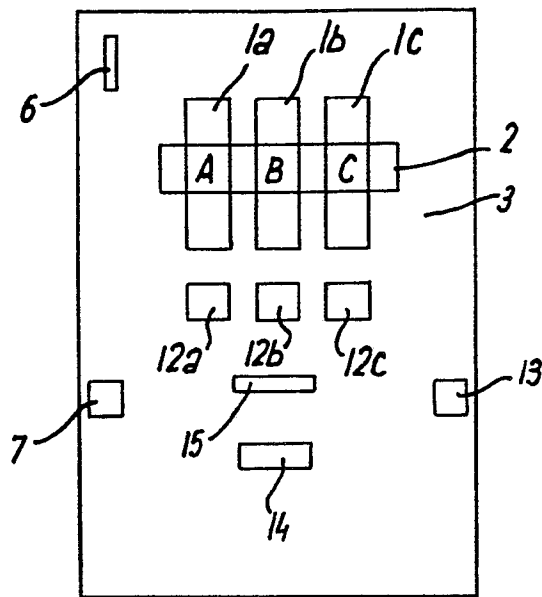


FIG. 1

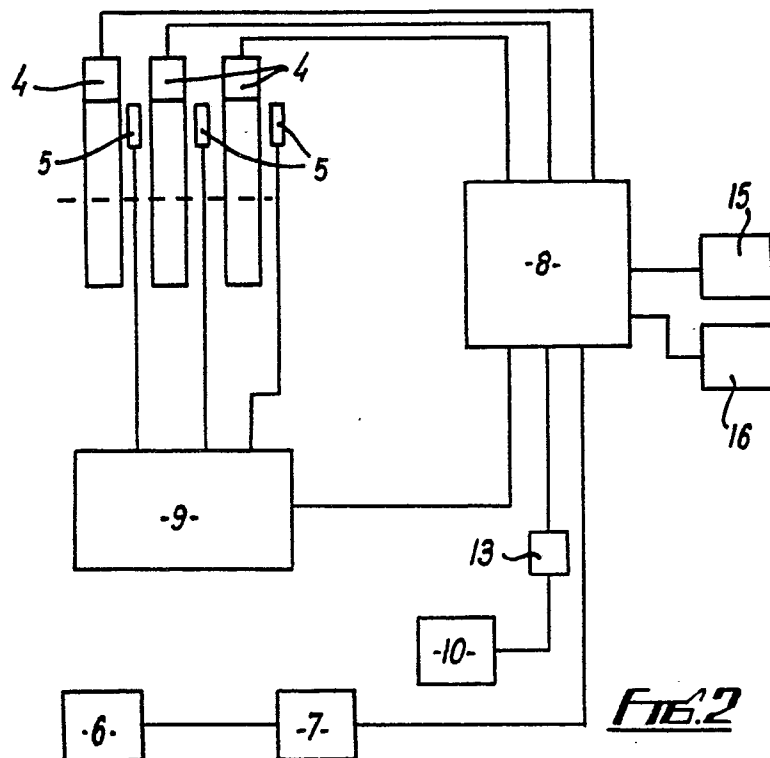


FIG. 2