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(54) **Coin-freed gaming machine**

(57) In a "fruit machine" which displays the rotating reels 13*a*, 13*b*, 13*c* on a television screen 12, a player with a losing combination may be granted a random chance to move a replacement symbol step-by-step along the screen to replace one or other of the "reel" symbols. If successful at this, he can then either collect his winning or gamble upon increasing it.

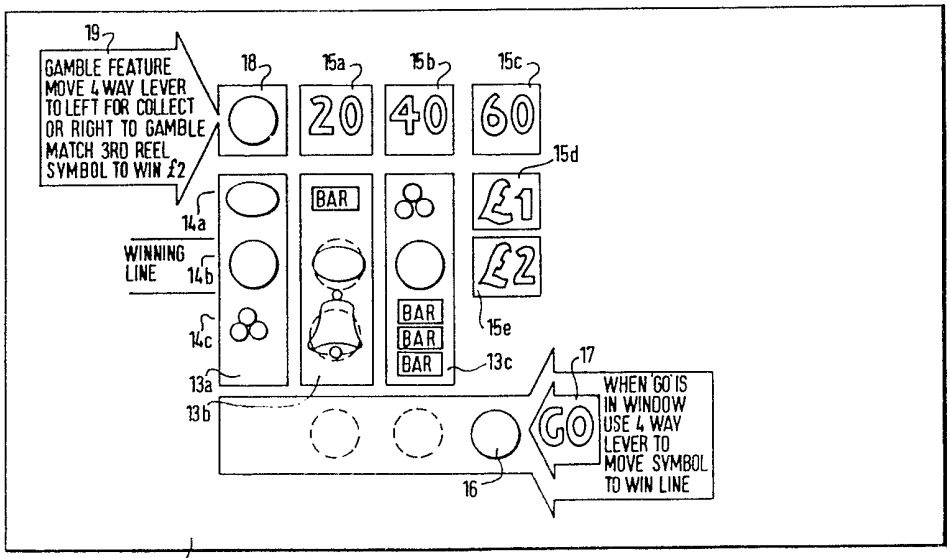

FIG 1.

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The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

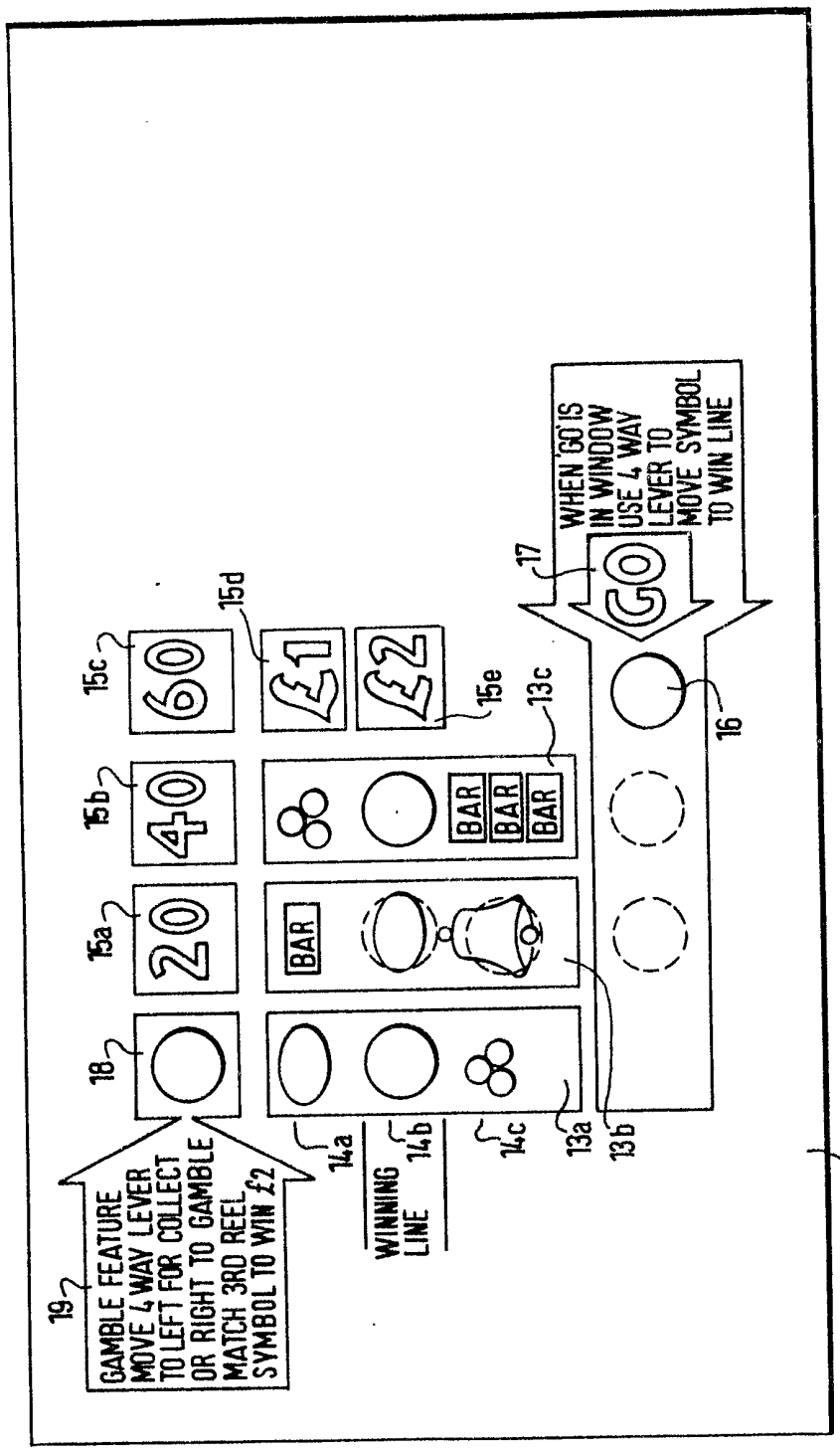

FIG.1.

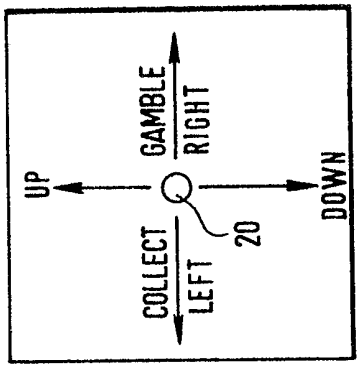

FIG 2

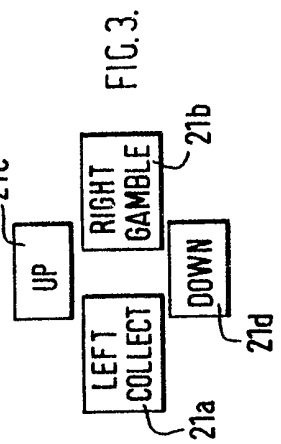

FIG.3.

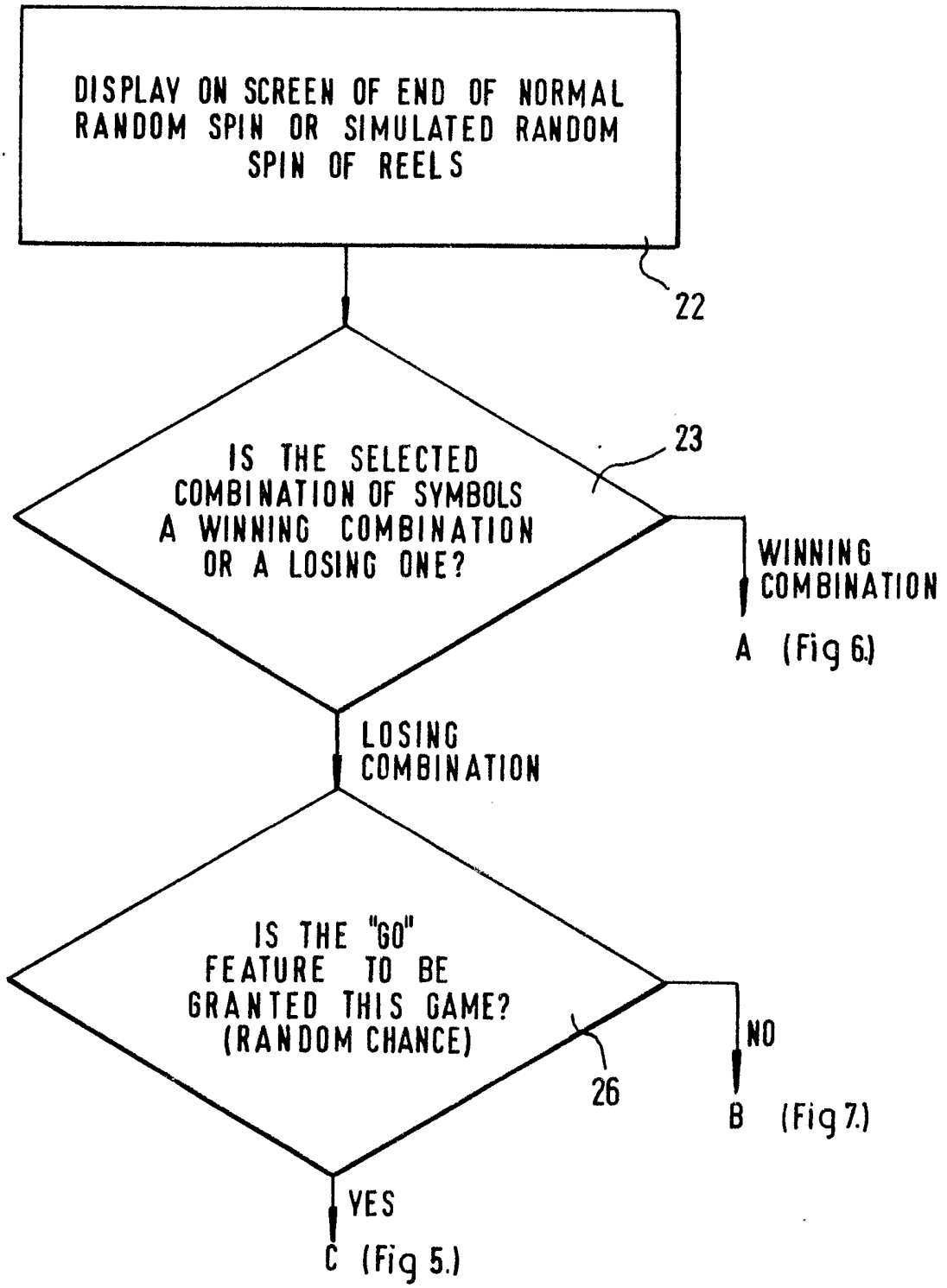
DISPLAY ON SCREEN OF END OF NORMAL RANDOM SPIN OR SIMULATED RANDOM SPIN OF REELS
22
IS THE SELECTED COMBINATION OF SYMBOLS A WINNING COMBINATION OR A LOSING ONE?
23
WINNING COMBINATION
A (Fig 6.)
LOSING COMBINATION
IS THE "GO" FEATURE TO BE GRANTED THIS GAME? (RANDOM CHANCE)
26
NO
B (Fig 7.)
YES
C (Fig 5.)

FIG.4.

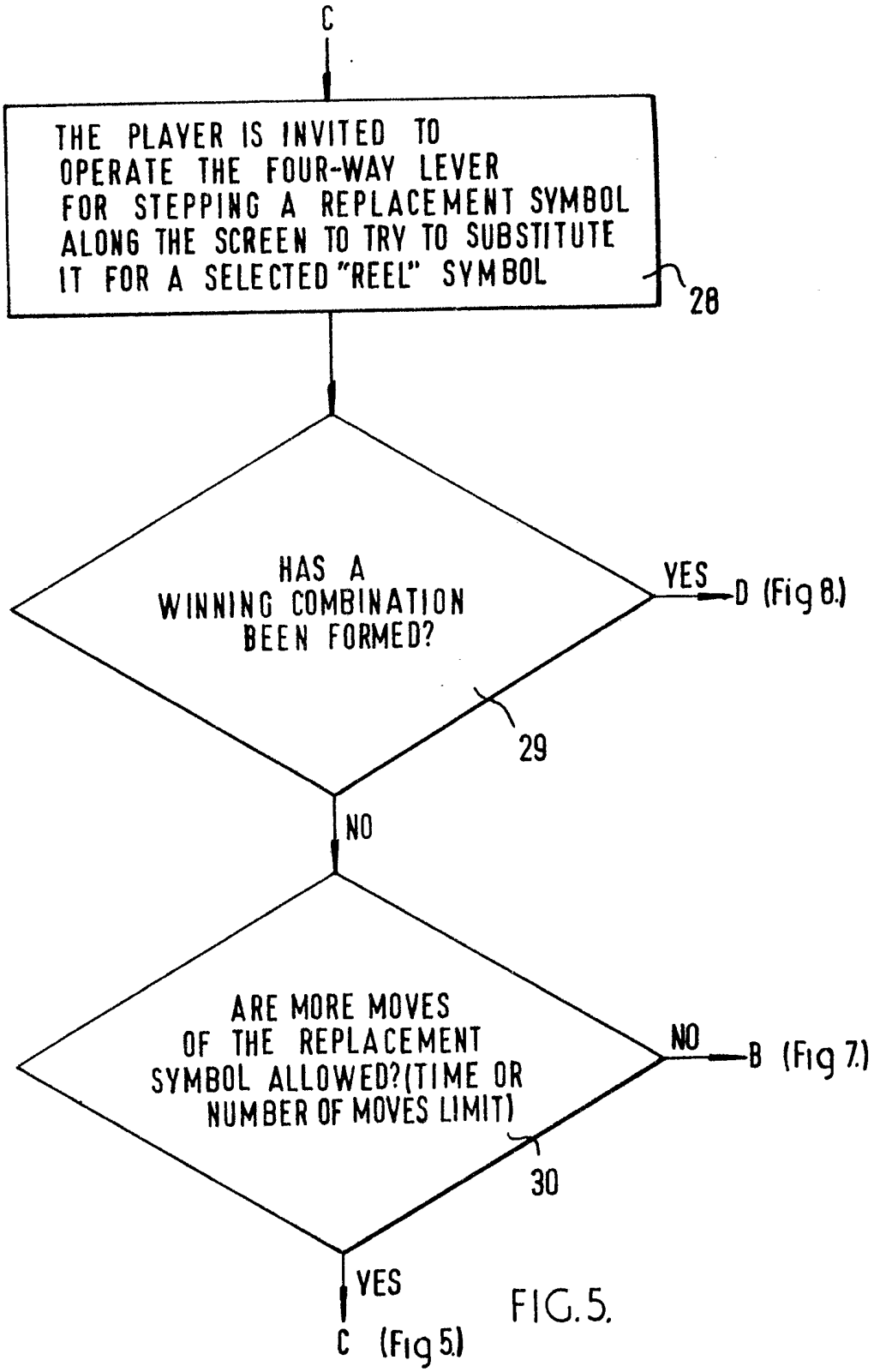
C
THE PLAYER IS INVITED TO OPERATE THE FOUR-WAY LEVER FOR STEPPING A REPLACEMENT SYMBOL ALONG THE SCREEN TO TRY TO SUBSTITUTE IT FOR A SELECTED "REEL" SYMBOL
28
HAS A WINNING COMBINATION BEEN FORMED?
YES
D (Fig 8.)
29
NO
ARE MORE MOVES OF THE REPLACEMENT SYMBOL ALLOWED? (TIME OR NUMBER OF MOVES LIMIT)
NO
B (Fig 7.)
30
YES
C (Fig 5.)

FIG. 5.

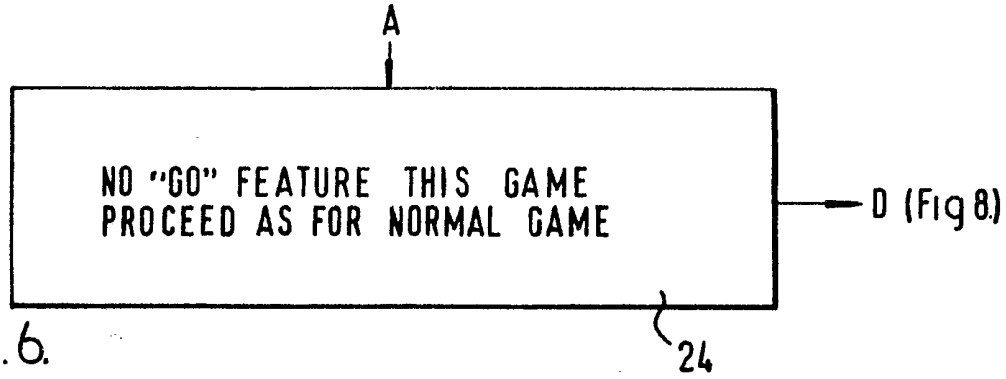

FIG. 6.

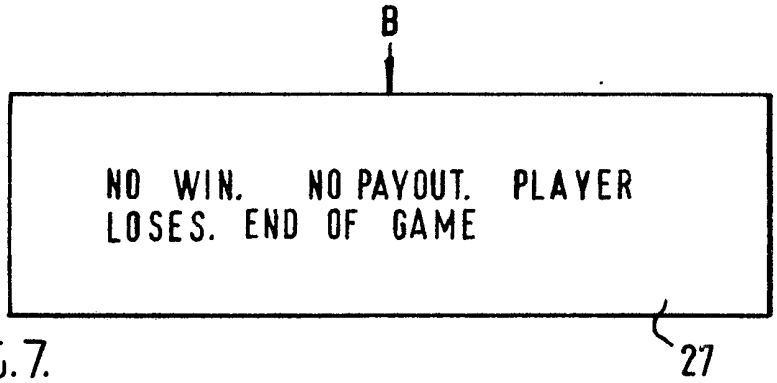

FIG. 7.

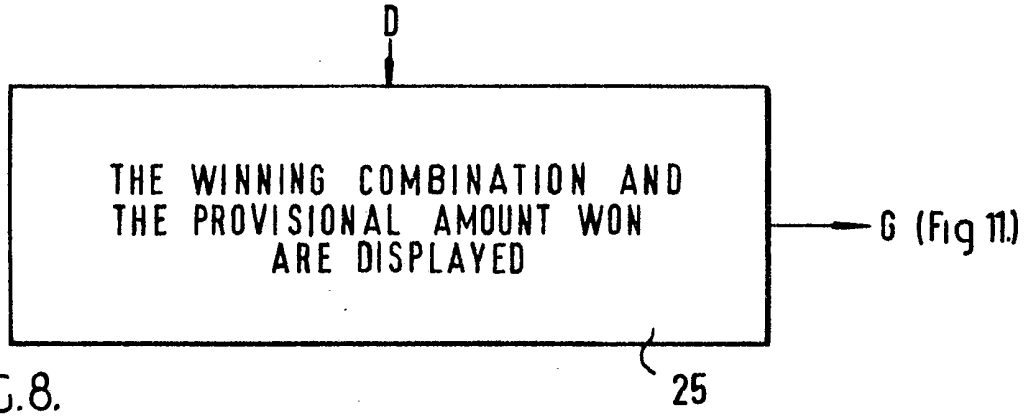

FIG. 8.

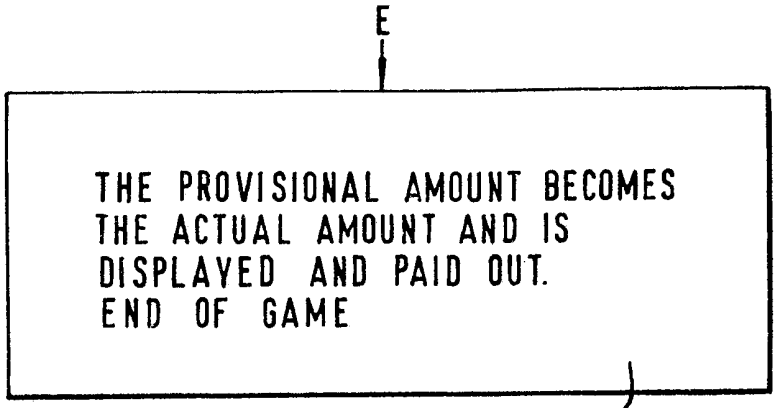
E
THE PROVISIONAL AMOUNT BECOMES THE ACTUAL AMOUNT AND IS DISPLAYED AND PAID OUT.
END OF GAME
32

FIG.9.

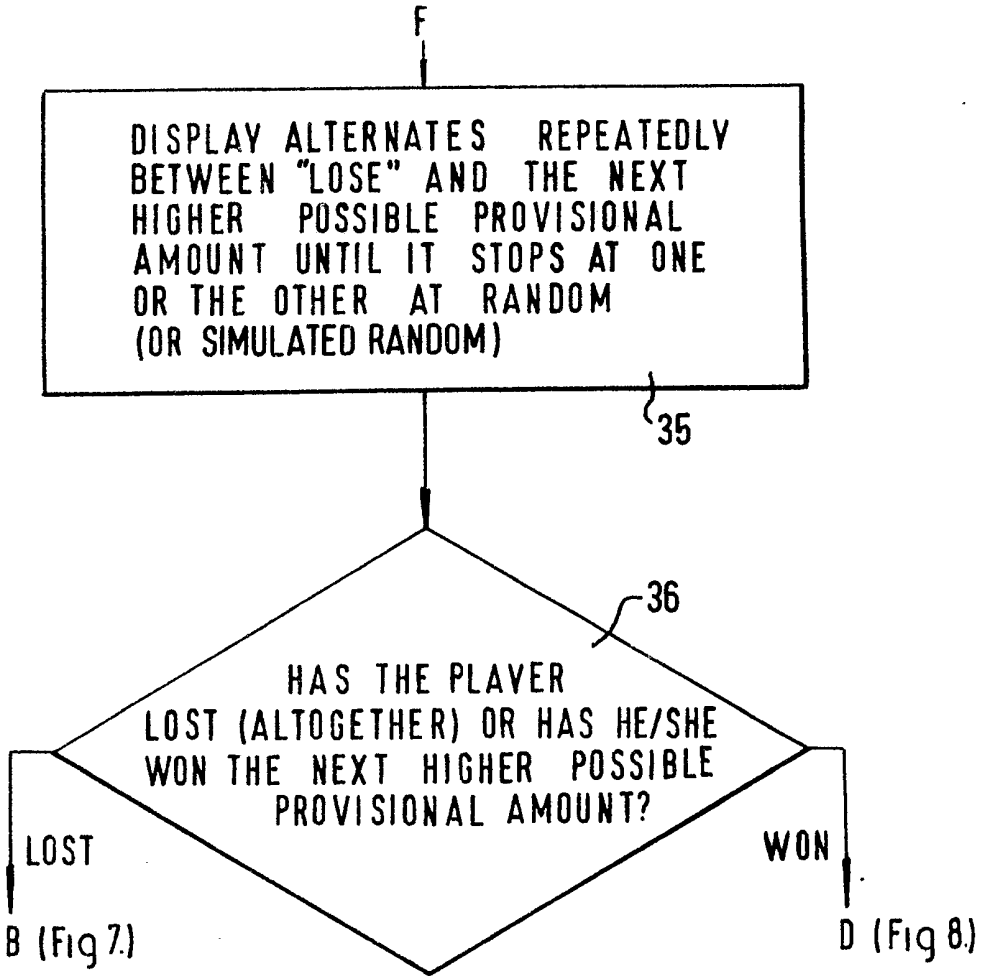
F
DISPLAY ALTERNATES REPEATEDLY BETWEEN "LOSE" AND THE NEXT HIGHER POSSIBLE PROVISIONAL AMOUNT UNTIL IT STOPS AT ONE OR THE OTHER AT RANDOM (OR SIMULATED RANDOM)
35
36
HAS THE PLAVER LOST (ALTOGETHER) OR HAS HE/SHE WON THE NEXT HIGHER POSSIBLE PROVISIONAL AMOUNT?
LOST
B (Fig 7.)
WON
D (Fig 8.)

FIG 10

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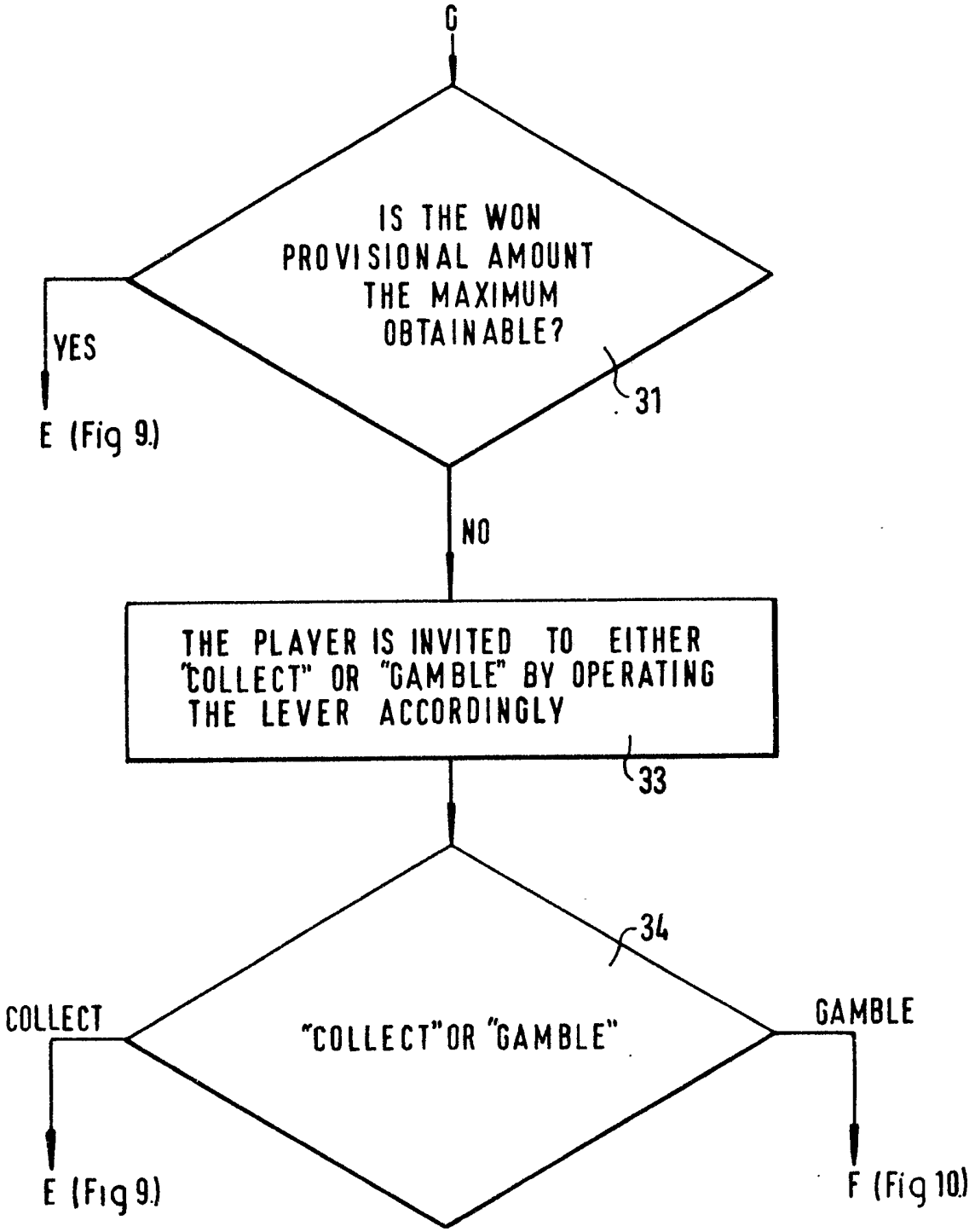

FIG. 11.

SPECIFICATION

Coin-freed gaming machine

Description

This invention relates to a coin-freed gaming machine of the type comprising first means defining a plurality of separate series of symbols and second means operative to select any symbol from each series and to display the combination of selected symbols from said plurality of series.

In a known and widely used exemplary machine of this type said first means takes the form of a plurality of rotatable reels or drums, said second means operates by rotating the reels or drums to positions in which the selected symbols are visible through a window, and many (if not all) of the symbols are pictures of various fruits, as a result of which the exemplary machine has become known colloquially as a "fruit machine".

The object of the invention is to enable a machine of such a type to present a player with a chance of improving the result of a game.

As seen from one aspect of the invention there is provided a coin-freed gaming machine comprising first means defining a plurality of separate series of symbols, second means operative to select at least one symbol from each series in a random or simulated random manner and to display all of the selected symbols in combination on a screen, third means predefining some predetermined combinations of symbols as winning combinations and other combinations as losing combinations, fourth means operative to determine whether a selected combination is a winning combination or a losing combination, and fifth means operative on some but not all of the occasions that a losing combination is selected to enable the losing combination to be changed to a wining combination, the operative occasions being determined in a random or simulated random manner, said fifth means being characterised in that it comprises sixth means to display on the screen, initially in a position spaced apart from the selected symbols, another symbol such that, if substituted for one of the selected symbols, the losing combination would be changed to a winning combination, and seventh means operable by the player for moving the position of said other symbol on the screen in directions selected by the player such that, if said seventh means is operated correctly by the player, said other symbol can be moved to a desired position in which it becomes substituted for said one of the selected symbols so as to change the losing combination to a winning combination.

Preferably the screen is a cathode ray tube screen.

Preferably said desired position is the actual position of said one of the selected symbols.

Preferably said fifth means is characterised by eighth means operative, in the event of a winning combination being obtained, to provide the player with a choice between either collecting a reward of a certain value or gambling upon increasing the value of the reward with the chance of decreasing the value of the reward.

Preferably said eighth means is operative in the event of the value of the reward being increased to provide the player with a further choice between either collecting the reward of the increased value or gambling upon still further increasing the value of the reward with the chance of decreasing the value of the reward.

Preferably the decrease in the value of the reward is to zero.

Preferably said sixth means is operative to select said other symbol from a respective series of symbols in a random or simulated random manner so that said other symbol will be sometimes suitable or sometimes unsuitable for changing a losing combination to a winning combination.

Preferably said sixth means is operative to display said respective series of symbols one after another in a given screen position, stopping the changing of displayed symbols on the selected symbol.

Preferably some losing combinations are such that said fifth means is incapable of changing any of them to a winning combination.

Preferably said first and second means are operative to display or to simulate rotating reels or drums which stop at random or simulated random on the screen.

The invention will be described by way of example with reference to the accompanying drawings, wherein:—

Fig. 1 illustrates the screen of a machine embodying the invention;

Fig. 2 illustrates a four-way lever of the machine;

Fig. 3 illustrates an array of four buttons as an alternative to the lever of Fig. 2; and

Figs. 4 to 11 in combination form a "truth diagram" of the machine illustrating the logical sequence of events in operating the machine.

Referring to Fig. 1 of the drawings, the machine is equipped with a television screen, shown schematically in Fig. 1, on which images are produced electronically by means within the machine in a manner analogous to the way in which images are produced on the television screens of well-known "space-invader" gaming machines.

Shown on the television screen12 are (images of) three rotating "fruit machine" reels 13*a*, 13*b* and 13*c*. As with conventional fruit machines, it is possible to see three complete symbols of each reel at any one time, so that the screen can show three horizontal rows 14*a*, 14*b* and 14*c* of three symbols each (that is, one symbol per reel per row) of which the middle row 14*b*, is the row which determines, when all three reels have "stopped", whether the player has a winning line or not, as with conventional fruit machines.

The machine is provided with a conventional printed list (not shown) showing various "winning lines" of symbols and the value of the award for each respective winning line, some winning lines being more valuable than others, as with

conventional fruit machines. Illuminable signs 15*a* to 15*e* indicate awards of 20 pence, 40 pence, 60 pence, £1 and £2 respectively. Such an award may be actual or only provisional, as will be explained hereinafter.

In addition to the total of nine symbols which are visible from the images of the three reels 13*a*, 13*b* and 13*c*, the screen shows images, one at a time, of a series of changing symbols in a space 16 near the bottom right hand corner of the screen. In the event of a "GO" feature being granted in any particular game (grant of the "GO" features being at random or simulated random) the symbol which finally occupies space 16 (after the symbols have ceased changing there) can be made to move stepwise, in a manner discussed hereinafter, so as to become superimposed upon, and to replace, any of the nine symbols shown of the three reels 13*a*, 13*b* and 13*c*. The symbol shown in space 16 can be stepped horizontally beneath the three reels 13*a*, 13*b* and 13*c*, one step taking it to a position beneath reel 13*c*, a second step taking it to immediately beneath reel 13*b* and a third step taking it to a position immediately beneath reel 13*a*. When the symbol (for convenience called a "replacement" symbol) has been stepped as desired to a position beneath reel 13*a*, 13*b* or 13*c*, it can be stepped upwardly so as to become superimposed upon, and to replace, the lowest symbol — in row 14*c* — after one step, the middle symbol — in row 14*b* — after another step and the highest symbol — in row 14*a* — after a third step. There is a maximum number of steps allowed in any one game (for example five steps) preferably just, but only just, sufficient for the replacement symbol to replace the middle symbol in row 14*b* of the left hand reel 13*a*. If (with a maximum of five steps) it is moved to replace the middle symbol in row 14*b* of the middle reel 13*b*, the player has one step in hand, whilst if the replacement symbol is moved correctly to replace the middle symol in row 14*b* of the right hand reel 13*c*, the player will have two steps in hand and can afford to overshoot the position (so that the replacement symbol accidentally moves to replace the highest symbol in row 14*a* of the right hand reel 13*c*) and bring the symbol back to the middle row, using up the full quota of five steps in the process. Hence if, for example (as shown) is happens that the left hand and right hand symbols in row 14*b* (of reels 13*a* and 13*c*) are oranges and the replacement symbol shown in space 16 is also an orange (a line of three oranges being a winning line) but the middle symbol in row 14*b* of reel 13*b* is not an orange, so that the reels are actually showing a losing line, the player is able, if fortunate enough to be granted the "GO" feature, to step the orange from space 16 two steps to beneath reel 13*b* and then to step the orange vertically two steps up to become superimposed upon, and to replace, the symbol shown in row 14*b* of reel 13*b*, so that a winning line of three oranges appears.

Of course, it may happen that the symbol which comes to be shown in space 16 is not an orange, in which case, even if the player is granted the "GO" feature, he is unable to create a winning line even if he correctly steps the replacement symbol into the desired position (left hand, centre or right hand) in row 14*b*.

Another possibility is that space 16 shows the orange that (in the example given) the player requires, but he is denied the "GO" feature.

An illuminable "GO" sign 17 informs the player in the event that the "GO" feature is granted.

In the event of the player successfully creating a winning line, with or without the "GO" feature (that is to say, either as a result of the images of the three reels 13*a*, 13*b*, 13*c* stopping in positions required to produce a winning line 14*b* or as a result of successful use of the "GO" feature producing a winning line 14*b*) a "GAMBLE OR COLLECT" feature becomes operative. When this happens, a space 18 at or near the top left hand corner of the screen is made to reproduce an image of the same symbol as the right hand symbol in row 14*b* of reel 13*c* and a sign 19 becomes illuminated to indicate to the player that he must choose between collecting the award shown (by illumination of one of the signs 15*a* to 15*e*) for the winning line or gambling upon increasing the award. At this stage, the award is provisional and is not actually paid out. If the player choses to collect the award, the provisional amount becomes the actual amount and the machine pays it out, as with a conventional fruit machine. If the player chooses to gamble, assuming that he has not won the highest award of £2, then the symbol shown in space 18 jumps backward and forwards between the space 18 on the one hand and the sign appertaining to the next highest award to the provisional award. For example, if the winning line obtained by moving the replacement symbol into the right place in row 14*b* corresponds to a provisional award of 40 pence, shown by illumination of sign 15*b*, and the player chooses to gamble, the symbol shown in space 18 jumps backwards and forwards between the space 18 and the sign 15*c* which corresponds to the next highest award of 60 pence. If the symbol eventually stops in space 18, then the player loses altogether and does not even obtain the provisional award corresponding to the winning line. If the gamble succeeds, the sign 15*c* stays on and the provisional award becomes 60 pence, whereupon the player can again choose between collecting it or gambling for a still higher award of £1 (sign 15*d*). Again, as previously, the player may lose altogether or may succeed in making the provisional award the sum of £1, whereupon he again has the choice between collecting the award of £1 or gambling for the highest award of £2. Further description of playing a game on the machine is given below with reference to Figs. 4 to 11.

Referring to Fig. 2, there is shown a four way lever 20 which can be moved (against a centre-spring return-means, not shown) to the left or right or up or down. The lever 20 is used for stepping the replacement symbol from space 16

to the left, to the right, upwardly or downwardly. It is also used for the player to indicate (when sign 19 is lit) whether he wishes to collect his award (indicated by moving the lever to the left) or to gamble for a higher award (indicated by moving the lever to the right).

Referring to Fig. 3, there are shown four push buttons 21*a* to 21*d* which may be substituted for the lever 20 and used in an analogous manner.

Referring to Figs. 4 to 11 which, as mentioned previously, in combination form a "truth diagram" of the machine, illustrating the logical sequence of events in operating the machine, logic circuitry (not shown) within the machine detects (box 22, Fig. 4) the display on the screen 12 of the end of a normal random spin or simulated random spin of reels 13*a*, 13*b* and 13*c*. The logic circuitry then determines (box 23) whether the selected combination of symbols at line 14*b* is a winning combination or a losing one. If the combination is a winning combination, the machine prohibits the granting of a "GO" feature for that particular game (Box 24, Fig. 6) and displays the winning combination and the provisional amount won (box 25, Fig. 8).

The logic circuitry then determines (box 31, Fig. 11) whether the won provisional amount is the maximum obtainable. If it is, the provisional amount becomes the actual amount (box 32, Fig. 9) and is paid out and that is the end of the game. If it is not (box 31, Fig. 11) the player is invited to "COLLECT OR GAMBLE". What happens in this event is described hereinafter, since the same "COLLECT OR GAMBLE" feature occurs after a successfully completed "GO" feature.

Referring back to Fig. 4, box 23, if the selected combination of symbols in line 14*b* is a losing combination, the logic circuitry determines (box 26) whether the "GO" feature is to be granted for this game, the chance of the feature being granted being a random or simulated random chance. If the logic circuitry determines that the "GO" feature is *not* to be granted, there is no win and no payout (box 27, Fig. 7). The player loses and that is the end of the game.

Referring back to Fig. 4, box 26, if the logic circuitry determines that the "GO" feature *is* to be granted this game, the player is invited (box 28, Fig. 5) to operate the four-way lever 20 (Fig. 2) for stepping a replacement symbol from space 16 (Fig. 1) along the screen 12 to try to substitute it for a selected "reel" symbol in line 14*b*. While this is in progress, the logic circuitry repeatedly tests to see whether a winning combination has been formed (box 29) and, if a winning combination has been formed, the winning combination and the provisional amount won are displayed (box 25, Fig. 8).

Referring back to Fig. 5, so long as a winning combination has not been formed (box 29) the logic circuitry tests to see whether more moves of the replacement symbol are allowed (box 30) there being both a time limit and a number of moves (for example, five moves) limit. So long as more moves of the replacement symbol are allowed, the player continues to be invited (box 28) to operate the four-way lever (Fig. 2) for stepping the replacement symbol along the screen 12 to try to substitute it for a selected "reel" symbol.

If and when the stage is reached that no winning combination has been formed (box 29) and no more moves of the replacement symbol are allowed (box 30) there is no win and no payout (box 27, Fig. 7). The player loses and that is the end of the game.

Referring back to the condition that the formation of a winning combination in line 14*b* is detected (box 29) and this winning combination and the provisional amount won are displayed (box 25, Fig. 8), the logic circuitry then determines (box 31, Fig. 11) whether the won provisional amount is the maximum obtainable. If it is, the provisional amount becomes the actual amount (box 32, Fig. 9) and is paid out and that is the end of the game.

Referring back to box 31, Fig. 11, if the won provisional amount is not the maximum obtainable the "COLLECT OR GAMBLE" feature mentioned earlier comes into operation. When this happens the player is invited (box 33, Fig. 11) to either "collect" or "gamble" by operating the lever 20 accordingly. The logic circuitry determines (box 34) whether the player has decided to collect (by pushing lever 20 to the left, Fig. 2) or gamble (by pushing the lever 20 to the right). If the player has decided to collect the provisional amount becomes the actual amount (box 32, Fig. 9) and is displayed and paid out, that being the end of the game.

Referring back to box 34, Fig. 11, if the player has decided to gamble, the display alternates repeatedly between "lose" (represented by space 18, Fig. 1) and the next higher possible provisional amount until it stops at one or the other at random (or simulated random), box 35, Fig. 10. The logic circuitry then determines (box 36, Fig. 10) whether the player has lost (altogether) or has won the next higher possible provisional amount. If the player has lost, there is no win and no payout and that is the end of the game (box 27, Fig. 7). If the player has won the next higher possible provisional amount, the logic circuitry recycles to display the winning combination and the provisional amount won (box 25, Fig. 8) to determine whether the won provisional amount is the maximum obtainable (box 31, Fig. 11) and, if so, to make the provisional amount the actual amount and to display it and pay it out (see above, box 32, Fig. 9) or if not to invite the player again to either collect or gamble by operating the lever 20 accordingly, whereupon the same sequence of events take place as described above commencing with determining whether the player has decided to collect or gamble, box 34, Fig. 11.

CLAIMS

1. A con-freed gaming machine comprising first means defining a plurality of separate series of symbols, second means operative to select at

least one symbol from each series in a random or simulated random manner and to display all of the selected symbols in combination on a screen, third means predefining some predetermined combinations of symbols as winning combinations and other combinations as losing combinations, fourth means operative to determine whether a selected combination is a winning combination or a losing combination, and fifth means operative on some but not all of the occasions that a losing combination is selected to enable the losing combination to be changed to a winning combination, the operative occasions being determined in a random or simulated random manner, said fifth means being characterised in that it comprises sixth means to display on the screen, initially in a position spaced apart from the selected symbols, another symbol such that, if substituted for one of the selected symbols, the losing combination would be changed to a winning combination, and seventh means operable by the player for moving the position of said other symbol on the screen in directions selected by the player such that, if some seventh means is operated correctly by the player, said other symbol can be moved to a desired position in which it becomes substituted for said one of the selected symbols so as to change the losing combination to a winning combination.

2. A gaming machine as claimed in claim 1 wherein the screen is a cathode ray tube screen.

3. A gaming machine as claimed in claim 1 or 2 wherein said desired position is the actual position of said one of the selected symbols.

4. A gaming machine as claimed in claim 1, 2 or 3 wherein said fifth means is characterised by eighth means operative, in the event of a winning combination being obtained, to provide the player with a choice between either collecting a reward of a certain value or gambling upon increasing the value of the reward with the chance of decreasing the value of the reward.

5. A gaming machine as claimed in claim 4 wherein said eighth means is operative, in the event of the value of the reward being increased to provide the player with a further choice between either collecting the reward of the increased value or gambling upon still further increasing the value of the reward with the chance of decreasing the value of the reward.

6. A gaming machine as claimed in claim 4 or 5 wherein the decrease in the value of the reward is to zero.

7. A gaming machine as claimed in any preceding claim wherein said sixth means is operative to select said other symbol from a respective series of symbols in a random or simulated random manner so that said other symbol will be sometimes suitable and sometimes unsuitable for changing a losing combination to a winning combination.

8. A gaming machine as claimed in claim 7 wherein said sixth means is operative to display said respective series of symbols one after another in a given screen position, stopping the changing of displayed symbols on the selected symbol.

9. A gaming machine as claimed in any preceding claim wherein some losing combinations are such that said fifth means is incapable of changing any of them to a winning combination.

10. A gaming machine as claimed in any preceding claim wherein said first and second means are operative to display or to simulate rotating reels of drums which stop at random or pseudo-random on the screen.

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