

[0095] The sub-control circuit 72 does not include a clock pulse generation circuit, a frequency dividers a random number generator, or a sampling circuit, but executes random number sampling in an operation program of the sub-CPU 74. Generation of the assistance time period is determined as the random number sampling is executed.

[0096] The sub-CPU 74 includes the number-of-AT-sets counter and a number-of-AT-games counter. The number-of-AT-sets counter stores the number of sets. The number-of-AT-games counter stores information concerning the number of games in one assistance time period.

[0097] The program ROM 75 stores a control program executed in the sub-CPU 74. The work RAM 76 is used as a temporary storage for the sub-CPU 74 to execute the control program.

[0098] The image control circuit 81 is made up of an image control CPU 82, an image control work RAM 83, image control program ROM 84, image ROM 86, video RAM 87, and an image control IC 88. The image control CPU 82 determines the display contents on the liquid crystal display 5 in accordance with an image control program stored in the image control program ROM 84 based on the parameters set in the sub-microcomputer 73. The signal from the sub-CPU 74 is input through an IN port 85.

[0099] The image control program ROM 84 stores the image control program involved in display on the liquid crystal display 5 and various selection tables. The image control work RAM 83 is used as a temporary storage for the image control CPU 82 to execute the image control program. The image control IC 88 forms an image responsive to the display contents determined by the image control CPU 82 and outputs the image to the liquid crystal display 5. The image ROM 86 stores dot data for forming an image. The video RAM 87 is used as a temporary storage for the image control IC 88 to form an image.

[0100] The sub-CPU 74 displays an image on the liquid crystal display 5 based on the command signal from the CPU 31.

[0101] Specifically, whenever a stop signal is input from the reel stop signal circuit 46 as the player operates the start lever 6 or the stop button 7L, 7C, 7R, the sub-CPU 74 transmits a signal to the image control CPU 82 and displays an image on the display screen 5a of the liquid crystal display 5.

[0102] The effect image displayed on the liquid crystal display 5 by the image control CPU 82 is displayed only outside the frame of the display window 4 for allowing the player to visually check the symbols on the reel 3 within the frame of the display window 4 at times; the effect image is also displayed within the frame of the display window 4 for allowing the player to visually check the symbols on the reel 3 within the frame of the display window 4 at times; or the effect image is displayed so as to cover all the symbols on the reel 3 within the frame of the display window at times. Therefore, the player can visually check the symbols on the reel 3 clearly within the frame of the display window 4 and can also visually check the effect image displayed over the full face of the rectangular 15-inch liquid crystal screen.

[0103] As described above, the gaming machine of the first embodiment of the invention includes a plurality of reel

belts 340 (contained in symbol strips) each on which a plurality of symbols are placed, a plurality of reel wheels 330, particularly the rims 330a and 330b (contained in annular bodies) to which the reel belts 340 are attached annularly, the liquid crystal 504 (contained in image display means) being provided in front of the reel wheels 330 for displaying an image concerning game play, and the reel backlights 513 (contained in light source) for illuminating the symbols on the reel belts 340 from behind the symbols, wherein the reel wheels 330, particularly the rims 330a and 330b are made transparent or semitransparent for transmitting light from the reel backlights 513 in the direction of the liquid crystal 504. Thus, the light from the reel backlight 513 passes through the reel wheel 330 and arrives at the liquid crystal 504, so that an image is sharply displayed even at a position where the shadow of the reel wheel 330 is cast, and the shadow of the reel wheel 330 is not cast over the image, enabling the player to clearly visually check the image and enjoy playing a game.

[0104] In the description of the embodiment, the reel wheel 330 is formed of polycarbonate which has good transparency and good shock resistance and can be molded at a low cost. In the invention, however, the reel wheel 330 may be formed of PMMA (polymethyl methacrylate), PET (polyethylene terephthalate), or any other translucent member.

[0105] In the description of the embodiment, the whole of the reel wheel 330 is made transparent. In the invention, however, if only the first and second annular rims 330a and 330b of the reel wheel 330 are made transparent, similar advantages can be provided.

[0106] In the description of the embodiment, the reel wheel 330 is made transparent. In the invention, however, the reel wheel 330 may be made translucent like the reel belt 340 or may be made semitransparent. Particularly, if the reel wheel 330 is made white, it is preferable because white allows the player to perceive color development of liquid crystal.

[0107] Second Embodiment

[0108] In a second embodiment of the invention, the reel wheel 330, particularly the rims 330a and 330b shown in FIGS. 3 through 5 are made semitransparent for transmitting light emitted from reel backlight 513 and the reel wheel 330, particularly the rims 330a and 330b are also formed so as to have diffusibility for diffusing the light emitted from the reel backlight 513. For example, the reel wheel 330 is formed of white paint containing fine particles provided with diffusibility, mixed with carbonate. Other components are similar to those in the first embodiment.

[0109] The gaming machine of the second embodiment of the invention includes a plurality of reel belts 340 (contained in symbol strips) each on which a plurality of symbols are placed, a plurality of reel wheels 330, particularly the rims 330a and 330b (contained in annular bodies) to which the reel belts 340 are attached annularly, the liquid crystal 504 (contained in image display means) being provided in front of the reel wheels 330 for displaying an image concerning game play, and the reel backlights 513 (contained in light source) for illuminating the symbols on the reel belts 340 from behind the symbols, wherein the reel wheels 330, particularly the rims 330a and 330b are formed so as to