

[Name of Document] DESCRIPTION

[Title of Invention] ARTICLE SELLING DEVICE

[Technical Field]

[0001]

The present invention generally relates to selling machines that sell articles, and more particularly relates to an article selling device that sells an article used for a game by a player.

[Background Art]

[0002]

PTL 1 suggests a game machine with a card dispensing function. If a customer designates a bulk purchase, this game machine collects a charge for a plurality of rounds of the game, and causes a card dispenser to dispense cards by the number corresponding to the collected charge for the game when the game is executed.

[0003]

In contrast, NPL 1 suggests a card game system that realizes a match-up card game. More specifically, NPL 1 provides description as follows.

"4.2 Purchase Only Card

A game is not played but only a card is purchased. One card is dispensed every time when a 100-yen coin is inserted. At this time, a point of an experience value is accumulated in a 'happiness box,' and all stored points of the

experience value are added to a type of occupation selected at the next game play. Also, the experience value of a type of occupation 'merchant' is also increased every time when a card is purchased, and the level is increased."

[Citation List]

[Patent Literature]

[0004]

[PTL 1] Japanese Unexamined Patent Application
Publication No. 2008-173392

[Non Patent Literature]

[0005]

[NPL 1] Author unknown, "Dragon Quest Monster Battle Road," [online], written date unknown, Wikipedia, [searched on September 13, 2010], Internet (URL:
[http://ja.wikipedia.org/wiki/Dragon_Quest_Monster Battle Road](http://ja.wikipedia.org/wiki/Dragon_Quest_Monster_Battle_Road))

[Summary of Invention]

[Technical Problem]

[0006]

PTL 1 describes that, when a bulk purchase is designated, a discount is applied, and for example, 12 cards are dispensed by a charge for 10 cards. However, PTL 1 does not suggest an incentive such as for advantageous play of the game.

[0007]

In NPL 1, the point of the experience value is accumulated in the happiness box only when the card is purchased and the game is not played, and the point of the experience value is merely added to the occupation selected at the next game play. That is, in NPL 1, an advantage (an incentive) provided when a card is purchased is not used for the current game play, but can be used only for the next game play. There may be a customer who desires to use the advantage obtained by the purchase of a card immediately on the spot, i.e., for the current game play. The related art cannot satisfy the desire.

[0008]

Therefore, an object of the present invention is to address at least one of this problem and other problems. For example, an object of the present invention is to allow a customer to use an advantage provided by purchase of an article for a current game play. The other problems will be understood through the entire description.

[Solution to Problem]

[0009]

To address the above-described problems, an article selling device according to the present invention is an article selling device having a game function that executes a game when an article is purchased by a customer, the machine including

an article housing unit that houses a plurality of articles;

a payment detection unit that detects payment of a consideration;

an eject unit that ejects an article housed in the article housing unit if the payment of the consideration is detected;

a count unit that counts the sum total of considerations detected by the payment detection unit or the number of articles ejected by the eject unit; and

a game parameter control unit that controls a game parameter, which is used by the game function, to be a value more advantageous to the customer as a count value counted by the count unit is larger.

[Advantageous Effects of Invention]

[0010]

With the present invention, the game parameter, which is used by the game function in the current game play, is controlled to be the value more advantageous to the customer as the count value for the sum total of the considerations detected by the payment detection unit or the number of the articles ejected by the eject unit is larger. Accordingly, the customer can use an advantage given through the purchase of the article, in the current game play.

[Brief Description of Drawings]

[0011]

[Fig. 1] Fig. 1 is a perspective view of an article selling device.

[Fig. 2] Fig. 2 is a front view of an exhibition unit 2 in which game cards are exhibited in portrait orientation.

[Fig. 3] Fig. 3 is a front view of the exhibition unit 2 in which game cards are exhibited in landscape orientation.

[Fig. 4] Fig. 4 is a front view of the exhibition unit 2 in which game cards in portrait orientation and game cards in landscape orientation are mixedly exhibited.

[Fig. 5] Fig. 5 is an illustration for explaining intervals among a plurality of holes (holder receivers 11) in the exhibition unit 2.

[Fig. 6] Fig. 6 is an enlarged view of the holder receiver 11.

[Fig. 7] Fig. 7 is a top view of a card holder 10.

[Fig. 8] Fig. 8 is a section of the card holder 10 along A-A' direction.

[Fig. 9] Fig. 9 is a section of the card holder 10 along B-B' direction.

[Fig. 10] Fig. 10 is an illustration showing the card holder 10 and a sample of a card mounted on a card mount surface of the card holder 10.

[Fig. 11] Fig. 11 is an illustration showing the holder receiver 11 and a head portion 32 inserted into the holder

receiver 11.

[Fig. 12] Fig. 12 is an illustration showing a state in which a shaft 31 is fitted to a third opening portion 22.

[Fig. 13] Fig. 13 is a transverse section corresponding to Figs. 11 and 12.

[Fig. 14] Fig. 14 is a transverse section corresponding to Figs. 11 and 12.

[Fig. 15] Fig. 15 is an illustration showing a variety of combinations, each combination including a sectional shape of the shaft 31 of the card holder 10 and a shape of the third opening portion 22 of the holder receiver 11.

[Fig. 16] Fig. 16 is an illustration showing modifications of the holder receiver 11, the shaft 31, and the head portion 32.

[Fig. 17] Fig. 17 is an illustration showing a control unit of the article selling device.

[Fig. 18] Fig. 18 is a flowchart showing article selling processing.

[Fig. 19] Fig. 19 is a flowchart showing game processing.

[Fig. 20] Fig. 20 is an illustration showing an example of a game card arrangement field and a display screen.

[Fig. 21] Fig. 21 is a flowchart showing match-up processing.

[Fig. 22] Fig. 22 is an illustration showing an example of a battle display.

[Fig. 23] Fig. 23 is an illustration showing an example of support production.

[Fig. 24] Fig. 24 is a flowchart showing an example of defense processing.

[Fig. 25] Fig. 25 is an illustration showing a display example of series information.

[Description of Embodiments]

[0012]

<Case Structure of Article selling device>

Fig. 1 is a perspective view of an article selling device that sells an article. An article selling device 1 has an article selling function and a game function. That is, the article selling device 1 is an article selling device having the game function that executes a game when an article is purchased by a customer. If the game function is focused, the article selling device 1 may be called game machine. In this case, it is assumed that an article to be sold is a game card; however, the invention may be applied to a case in which another article (a toy, such as a doll or a miniature car) is an article to be sold.

[0013]

The exhibition unit 2 is a portion in which samples of cards on sale are exhibited. A display device 3 displays a guidance relating to sale of cards and a game screen. For example, it is assumed that a game executed by the game

function is a game which matches a plurality of game characters of different kinds (S-person, N-person, U-person) against opponents and determines the outcome (win or loss). It is also assumed that a customer who is a game player presents own card to the game function of the article selling device 1, and hence the customer can have a match-up with a match-up opponent (a CPU or another customer). It is further assumed that, in the game, the plurality of game characters make a team, and the team makes a match-up against an opponent team. Also, it is assumed that a design of a game character is drawn on a first surface (the front surface) of each card, and a computer-readable code for identifying the game character (the game card) is drawn on a second surface (the back surface). In this case, a sales strategy may be employed, in which a card with a design relating to the S-person is sold in a first series, a card with a design relating to the N-person is sold in a second series, and a card with a design relating to the U-person is sold in a third series. The duration of a certain series is, for example, one month. Samples of cards now on sale are exhibited in the exhibition unit 2. Accordingly, there is an advantage that the customer can visually check cards on sale. The material of a card is, for example, paper or resin. Hereinafter, this card is called game card. By arranging at least one game card on an operation panel

surface, a defense formation and an attack formation in a match-up game can be instructed to the CPU.

[0014]

An IC card reader/writer device 4 is a device for reading information from and writing information in an IC card which is lent or sold to the customer. For example, each IC card stores an image of a game character (an avatar) selected by the customer, and a game parameter (an experience value etc.) used by the game function.

[0015]

An audio output device 5 outputs voices and effect sounds relating to a guidance about the sale of cards and relating to the game.

[0016]

A code reader unit 6 functions as reading means for reading a code provided at an operation member and position detection means for detecting the position of the operation member with respect to the operation panel surface. For example, the code reader unit 6 reads a code printed on the back surface of a game card which is the operation member, and recognizes the position where the game card is mounted. The code reader unit 6 includes a top plate on which at least one card is mounted and which has transparency to light, and a reading unit that reads the code provided at the game card. The top plate also functions as the

operating plate surface on which at least one game card, being the operation member, is mounted by an operator.

[0017]

The display device 3 functions as a display unit that displays an image of a game character corresponding to this code. The code may be magnetic information. Alternatively, the code may be transmitted with electromagnetic waves (infrared rays) or light. As described above, the code reader unit 6 may be a reader/writer device for magnetic information, or a communication device for electromagnetic waves (infrared rays) or light. The game card may be a magnetic card or a non-contact IC card. According to the present invention, a display position of an image of each game character is associated with an arrangement position of each corresponding game card on the operation panel surface.

[0018]

An operation unit 7 is an input device that inputs a selection instruction of the customer relating to purchase of a game card, and an instruction of the customer relating to execution of the game. A coin slot 8 is a slot into which purchase money or a consideration equivalent to a game card is inserted. A card eject unit 9 has an eject slot from which the purchased game card is ejected from a card housing unit (an article housing unit) that houses a plurality of game cards (articles).

[0019]

Fig. 2 is a front view of the exhibition unit 2 in which game cards are exhibited in portrait orientation. The exhibition unit 2 has a plurality of holder receivers 11 that function as attachment portions to which card holders 10 are attached. Each of the card holders 10 functions as a holder portion that holds a sample of a game card. The holder receiver 11 is formed by, for example, punching a plate-shaped member forming the exhibition unit 2. In Fig. 2, the card holder 10 is also fixed in portrait orientation so that the game card can be exhibited in portrait orientation. Since the game card has a substantially rectangular shape, two sides are long sides and the other two sides are short sides from among the four sides.

[0020]

Fig. 3 is a front view of the exhibition unit 2 in which game cards are exhibited in landscape orientation. According to the present invention, the card holder 10 is attached to the exhibition unit 2 in any of portrait orientation and landscape orientation. Hence, the limit to the orientation of the design drawn on the game card is relieved.

[0021]

Fig. 4 is a front view of the exhibition unit 2 in which game cards in portrait orientation and game cards in

landscape orientation are mixedly exhibited. According to the present invention, it is one of advantages that the game cards in portrait orientation and the game cards in landscape orientation can be mixedly exhibited.

[0022]

Fig. 5 is an illustration for explaining intervals among a plurality of holes (the holder receivers 11) in the exhibition unit 2. The exhibition unit 2 shown in Fig. 5 has hole-shaped holder receivers 11a to 11i for fixing the card holders 10. When a matter common to the holder receivers 11a to 11i is explained, suffixes a to i are omitted, and the holder receivers 11a to 11i are merely called holder receivers 11.

[0023]

According to the present invention, the intervals of the holder receivers 11a to 11i are determined so that the intervals when a plurality of game cards are exhibited in portrait orientation are equivalent and the intervals when a plurality of game cards are exhibited in landscape orientation are equivalent. Also, even when cards in portrait orientation and cards in landscape orientation are mixedly exhibited, the intervals of the holder receivers 11a to 11i are determined with a measure so that the cards are arranged with equivalent intervals as possible. Since the holder receivers 11a to 11i are arranged with the intervals

according to the present invention, as shown in Fig. 4, the appearance is hardly degraded even when the game cards in portrait orientation and the game cards in landscape orientation are mixed.

[0024]

In Fig. 5, a distance a_1 from the left side of the exhibition unit 2 to the holder receiver 11a is equivalent to a distance a_{10} from the right side of the exhibition unit 2 to the holder receiver 11i. Also, the distances a_1 and a_{10} are set to distances at which the lateral sides of the card holders 10 do not contact the lateral sides of the exhibition unit 2. The holder receivers 11a to 11i each have a horizontal width d_1 .

[0025]

As it is clear from Figs. 2 and 3, some of the holder receivers 11a to 11i are first holes each of which is used when the holder portion is attached to the attachment portion so that the orientation of the card holder 10 (the holder portion) is a first direction (the vertical direction) with respect to the exhibition unit 2, or second holes each of which is used when the holder portion is attached to the attachment portion so that the orientation of the holder portion is a second direction (the horizontal direction) that is different from the first direction by 90° with respect to the exhibition unit 2. Referring to Figs. 2

and 5, the first holes are the holder receives 11a, 11b, 11d, 11e, 11f, 11h, and 11i. Referring to Figs. 3 and 5, the second holes are the holder receives 11a, 11c, 11e, 11g, and 11i. As it is clear from these figures, the holder receivers 11a, 11e, and 11i are common holes which are used when the holder receivers are attached in any of portrait orientation and landscape orientation.

[0026]

Referring to Fig. 5, the distance between the holder receivers 11a and 11b is a_2 , the distance between the holder receivers 11b and 11c is a_3 , the distance between the holder receivers 11c and 11d is a_4 , the distance between the holder receivers 11d and 11e is a_5 , the distance between the holder receivers 11e and 11f is a_6 , the distance between the holder receivers 11f and 11g is a_7 , the distance between the holder receivers 11g and 11h is a_8 , and the distance between the holder receivers 11h and 11i is a_9 . The arrangement of the card holders in the exhibition unit 2 is left-right symmetric in an aesthetic viewpoint. Hence, equations are established as follows: $a_1 = a_{10}$, $a_2 = a_9$, $a_3 = a_8$, $a_4 = a_7$, and $a_5 = a_6$.

[0027]

The intervals of the holder receivers used when all card holders 10 are arranged in portrait orientation are each equivalent to a_2 . That is, not only an equation is

established as follows: $a_2 = a_5 = a_6 = a_9$, but also an equation is established as follows: $a_3 + d_1 + a_4 = a_7 + d_1 + a_8 = a_2$. This interval is called first interval D1 ($D_1 = a_2$).

[0028]

Similarly, the intervals of the holder receivers used when all card holders 10 are arranged in landscape orientation are each equivalent to $a_2 + d_1 + a_3$. Hence, an equation is established as follows: $a_2 + d_1 + a_3 = a_4 + d_1 + a_5 = a_6 + d_1 + a_7 = a_8 + d_1 + a_9$. This interval is called second interval D2 ($D_2 = a_2 + d_1 + a_3$). The ratio of the first interval D1 to the second interval D2 is substantially equivalent to an aspect ratio (a ratio of a length DS in the short-side direction to a length DL in the long-side direction) of a first surface (a game card mount surface) of the card holder 10 or the sample of the game card (Fig. 7). For example, if the aspect ratio of the sample of the game card is 2:3, the ratio of the first interval D1 to the second interval D2 is also 2:3.

[0029]

Fig. 6 is an enlarged view of the holder receiver to which the shaft of the holder portion is fitted. In this example, the holder receiver 11 has three opening portions. A first opening portion 20 is a rectangular opening portion with a horizontal length d_1 and a vertical length d_2 . The

shape of the first opening portion 20 is similar to the shape of a head portion 32 that is coupled to an end of a shaft 31 that extends from the back surface of a main body 30 of the card holder 10. A second opening portion 21 has a substantially inverted trapezoidal shape. The inverted trapezoidal part has a height d3. A third opening portion 22 is a rectangular opening portion with a horizontal length d5 and a vertical length d4. The shape of the third opening portion 22 is similar to the sectional shape of the shaft 31 extending from the back surface of the main body 30 of the card holder 10. The holder receiver 11 has a length d0 in the vertical direction. From among a plurality of sides forming a fitting plane P1 of the holder receiver 11, the shape of a bottom side Ea1 located at the lowermost position in the vertical direction is significant to allow the card holder 10 to be attached in landscape orientation and portrait orientation. In a state in which the exhibition unit 2 is attached to the case of the article selling device 1 and the article selling device 1 is installed on a horizontal surface, the bottom side Ea1 is a side that is located at the lowermost position in the vertical direction from among the plurality of sides.

[0030]

Fig. 7 is a top view of the card holder 10. The shape of the upper surface of the card holder 10 is a

substantially rectangular shape. The card mount surface (also called the upper surface or the first surface) of the card holder 10 has at least two support portions for supporting the card. A first support portion 25 is provided along the long-side direction of the first surface, and supports a first end portion that is an edge along the long-side direction of the sample of the card. In particular, the first support portion 25 prevents the sample from falling from the card holder 10 because of the gravity when the sample of the card is exhibited in landscape orientation.

[0031]

A second support portion 26 is provided along the short-side direction of the first surface, and supports a second end portion that is an edge along the short-side direction of the sample. In particular, the second support portion 26 prevents the sample from falling from the card holder 10 because of the gravity when the sample of the card is exhibited in portrait orientation.

[0032]

In Fig. 7, a third support portion 27 is provided as an option along the long-side direction of the first surface. The third support portion 27 supports a third end portion along the long-side direction of the sample of the card. Also, although not shown, a fourth support portion may be provided along the short-side direction of the first surface.

The fourth support portion supports a fourth end portion along the short-side direction of the sample.

[0033]

Fig. 8 is a section of the card holder 10 along A-A' direction. The card holder 10 has the main body 30 as a primary portion. The main body 30 has a card mount surface S1 that is the first surface on which the sample is mounted. The first support portion 25 and the third support portion 27 are provided at the card mount surface S1. These support portions each have an L-like sectional shape. That is, the first support portion 25 and the third support portion 27 each have a support groove 33 for pinching and supporting the card. The shaft 31 and the head portion 32 are provided at the back surface S2 of the main body 30. That is, the back surface (the second surface) of the main body 30 is coupled with one end of the shaft 31, and the head portion 32 having a sectional shape with a larger area than the area of the sectional shape of the shaft is coupled with the other end of the shaft 31. The shaft protrudes from the second surface located at the back side of the first surface.

[0034]

Fig. 9 is a section of the card holder 10 along B-B' direction. In Fig. 9, the second support portion 26 has an inverted L-like shape. That is, the second support portion 26 also has a support groove for supporting the card. As

long as any of the first support portion and the third support portion has an L-like shape, the second support portion 26 may simply have an I-like sectional shape. In this case, the second support portion does not have a support groove. Hence, formation of the second support portion can be simplified. If the fourth support portion is employed, the first support portion and the third support portion may have the support grooves, and the second support portion and the fourth support portion may not have the support grooves. Alternatively, the first support portion and the third support portion may not have the support grooves, and the second support portion and the fourth support portion may have the support grooves.

[0035]

As it is clear from Figs. 8 and 9, when the shaft 31 and the head portion 32 are cut along a plane parallel to the back surface or the front surface of the main body 30, the sectional shapes (Fig. 10) are rectangular shapes. That is, one side of the shaft 31 has a length b_1 , and the other side of the shaft 31 has a length c_1 . If $b_1 = c_1$, the sectional shape of the shaft 31 is a square. One side of the head portion 32 has a length b_0 , and the other side of the head portion 32 has a length c_0 . If $b_0 = c_0$, the sectional shape of the head portion 32 is a square.

[0036]

Fig. 10 is an illustration showing the card holder 10 and the sample of the card mounted on the card mount surface of the card holder 10. Three sides from among the four sides of the sample of a game card 35 are supported by the support grooves of the above-described support portions.

[0037]

Fig. 11 is an illustration showing the holder receiver 11 and the head portion 32 inserted into the holder receiver 11. It is found that the area of the first opening portion 20 of the holder receiver 11 is larger than the area of the sectional shape of the head portion 32. Also, it is found that the area of the third opening portion 22 is smaller than the area of the sectional shape of the head portion 32. The direction indicated by arrow in Fig. 11 is a substantially vertical direction. Hence, by sliding the card holder 10 in the arrow direction, the shaft 31 is fitted to the third opening portion 22.

[0038]

Fig. 12 is an illustration showing a state in which the shaft 31 is fitted to the third opening portion 22. Referring to this figure, it is found that the area of the third opening portion 22 is larger than the area of the sectional shape of the shaft 31. Since the shape of the holder receiver 11 is determined to correspond to the sectional shape of the shaft 31, the card holder 10 can be

stably fixed to the holder receiver 11 in any of portrait orientation and landscape orientation. Vibration is sometimes applied to the case of the article selling device 1 having the game function when the customer enjoys the game. Even when such vibration is applied, the card holder 10 has to be reliably held by the holder receiver 11 so that the card holder 10 does not fall.

[0039]

Figs. 13 and 14 are each a transverse section corresponding to Figs. 11 and 12. The holder receiver 11 may not be the simply punched hole, and the holder receiver 11 may have a bottom portion 40 that engages with an end surface of the head portion 32. Since the bottom portion 40 is provided, the head portion 32 of the holder receiver 11 moves from the first opening portion 20 to the third opening portion 22 while the head portion 32 of the holder receiver 11 slides on the bottom portion 40. Accordingly, the bottom portion 40 functions as a guide for smooth movement of the head portion 32. That is, the card holder 10 can be easily attached to and detached from the holder receiver 11.

[0040]

Fig. 15 is an illustration showing a variety of combinations, each combination including a sectional shape of the shaft 31 of the card holder 10 and a shape of the third opening portion 22 of the holder receiver 11.

According to the present invention, the shape of a side Eb1 that contacts the bottom side Ea1 when the card holder 10 is attached in landscape orientation, and the shape of a side Eb2 that contacts the bottom side when the card holder 10 is attached in portrait orientation are substantially similar to the shape of the bottom side Ea1. The side Eb1 and the side Eb2 are sides forming the sectional shape of the shaft 31 of the card holder 10 and contact the bottom side Ea1 located at the lowermost position in the vertical direction from among the plurality of sides forming the fitting plane P1 of the holder receiver 11.

[0041]

For example, Fig. 15(a) shows a sectional shape of the shaft 31 when the card holder 10 is in portrait orientation, a sectional shape of the shaft 31 when the card holder 10 is in landscape orientation, and a shape of the third opening portion 22 of the holder receiver 11, in order from left. Of course, these sectional shapes are sectional shapes of the shaft 31 obtained by cutting the shaft 31 along planes parallel to the second surface of the main body 30.

According to the present invention, since the card holder 10 should be able to be attached in any of portrait orientation and landscape orientation, the sectional shape of the shaft 31 of the card holder 10 and the shape of the third opening portion 22 of the holder receiver 11 have to satisfy a

certain condition. The sectional shape of the shaft 31 is a shape when the shaft 31 is cut in a direction parallel to the mount surface of the sample of the game card.

[0042]

Referring to Fig. 15(a), the sectional shape of the shaft 31 is a square. The four corners of the square may be chamfered and rounded. The card holder 10 can be attached in any of portrait orientation and landscape orientation as long as the shapes of the 90°-different two sides Eb1 and Eb2 forming the sectional shape of the shaft 31 are similar to the shape of the bottom side Ea1 of the third opening portion 22 of the holder receiver 11 (the side which contacts the side of the sectional shape of the shaft 31). The side Eb1 is parallel to the long-side direction of the second surface of the main body 30, and the side Eb2 is parallel to the short-side direction of the second surface of the main body 30. That is, the certain condition is that, in the sectional shape of the shaft obtained by cutting the shaft in the plane parallel to the second surface, a first shape in a direction parallel to the long-side direction of the second surface and a second shape in a direction parallel to the short-side direction of the second surface are common shapes, and in the shape of the hole portion functioning as the holder receiver, the shape of a portion fitted to a portion with the first shape of the shaft or

fitted to a portion with the second shape of the shaft is substantially similar to the first shape and the second shape.

[0043]

Since the sectional shape of the shaft 31 shown in Fig. 15(a) is the square, the 90°-different two sides both have linear shapes. Of course, the bottom side of the third opening portion 22 has a linear shape. Accordingly, these are similar to one another. As described above, the condition to allow the card holder 10 to be attached in any of portrait orientation and landscape orientation is that the shapes of the two sides, which are two sides forming the sectional shape of the shaft 31 and have 90°-different normal directions, are similar to the shape of the bottom side of the third opening portion 22 of the holder receiver 11.

[0044]

Fig. 15(b) shows a sectional shape of the shaft 31, the sectional shape being an equilateral octagon. Two sides with 90°-different normal directions from among the eight sides forming the equilateral octagon each have a shape similar to the bottom side of the third opening portion 22. Accordingly, the condition to allow the card holder 10 to be attached in any of portrait orientation and landscape orientation is satisfied.

[0045]

Fig. 15(c) shows a sectional shape of the shaft 31, the sectional shape being an isoscales right triangle. As it is clear from the figure, the isoscales right triangle also satisfies the condition to allow the card holder 10 to be attached in any of portrait orientation and landscape orientation.

[0046]

Fig. 15(d) shows a sectional shape of the shaft 31, the sectional shape being a trapezoid. As it is clear from the figure, two sides with 90°-different normal directions are similar to the bottom side of the third opening portion 22. Accordingly, the trapezoid also satisfies the condition to allow the card holder 10 to be attached in any of portrait orientation and landscape orientation.

[0047]

Fig. 15(e) shows a sectional shape of the shaft 31, the sectional shape being obtained by offsetting a square by 45°. In this case, the shape of the bottom side of the third opening portion 22 has to be changed to correspond to the sectional shape of the shaft 31. Referring to the figure, the condition to allow the card holder 10 to be attached in any of portrait orientation and landscape orientation is that one of two edges forming the sectional shape of the shaft 31 is overlaid on the other edge when the shaft 31 is

rotated from a predetermined rotation position by 90° . That is, if the condition is generalized, the condition is that the shapes of two sides (edges) in 90° -different directions are similar to the shape of the bottom side (bottom edge) of the third opening portion 22.

[0049]

Fig. 15(f) shows a sectional shape of the shaft 31, the sectional shape being a cross. As it is clear from the figure, the condition is that the shapes of two sides (edges) in 90° -different directions are similar to the shape of the bottom side (bottom edge) of the third opening portion 22. In Fig. 15(f), while the shape of the bottom side of the third opening portion 22 is simply linear, the shape of the bottom side of the third opening portion 22 may be a shape similar to a lower half portion of the cross shape. In this case, rattling of the card holder 10 with respect to the holder receiver 11 can be likely reduced.

[0050]

Fig. 15(g) shows a sectional shape of the shaft 31, the sectional shape being a substantial cross employing curves. Two sides (edges) in 90° -different directions are similar to the shape of the bottom side (bottom edge) of the third opening portion 22. Hence, the card holder 10 can be attached in any of portrait orientation and landscape orientation.

[0051]

Fig. 15(h) shows a sectional shape of the shaft 31, the sectional shape being a quadstar. Two sides (edges) in 90°-different directions are similar to the shape of the bottom side (bottom edge) of the third opening portion 22. Hence, the card holder 10 can be attached in any of portrait orientation and landscape orientation.

[0052]

As described above, if the shapes of two sides (edges) from among a plurality of sides (edges) forming the sectional shape of the shaft 31 are similar to the shape of the bottom side (bottom edge) of the third opening portion 22, the card holder 10 can be attached in any of portrait orientation and landscape orientation. The residual sides (edges) other than the two sides (edges) satisfying the condition may each have any shape. However, a condition to be satisfied by the residual sides (edges) is to each have a shape which does not disturb the housing of the shaft 31 in the third opening portion 22.

[0053]

Fig. 16 is an illustration showing modifications of the holder receiver 11, the shaft 31, and the head portion 32. Fig. 16(a) shows a modification in which the shaft 31 and the head portion 32 are integrally molded as a prism, and the holder receiver 11 is a box that can house the prism.

The sectional shape (a portion indicated by oblique lines) of the prism is similar to the sectional shape of the corresponding box. That is, two sides (edges) in 90°-different directions forming the sectional shape of the prism are similar to the sectional shape of the box corresponding to the bottom side (bottom edge) of the third opening portion 22. Hence, the card holder 10 can be attached in any of portrait orientation and landscape orientation.

[0054]

Fig. 16(b) shows a latch mechanism 50. The latch mechanism includes a fixed portion that is fixed to a flat plate of the exhibition unit 2, and an elastic body (e.g., leaf spring) attached to the fixed portion. The head portion 32 of the card holder 10 can rotate in a plane parallel to the flat plate of the exhibition unit 2; however, is forced to be arranged in portrait orientation or landscape orientation by the latch mechanism 50. Accordingly, the orientation of the card holder 10 can be changed although the card holder 10 is not removed from the holder receiver 11.

[0055]

<Control Flow of Article selling device>

Fig. 17 is an illustration showing a control unit of the article selling device. A CPU 61 realizes the game

function and the card selling function by reading various programs and data stored in a ROM 62. The ROM 62 is a nonvolatile storage device (e.g., read-only memory, EEPROM, flash memory, or hard disk drive). A RAM 63 is a volatile storage device (e.g., DRAM) that functions as a work area or the like.

[0056]

A coin detection unit 64 detects whether a coin is inserted into the coin slot 8 or not. If the coin detection unit 64 detects the insertion of the coin, sends a detection signal to the CPU 61. The coin may be hard money or a game coin which is lent in return for hard money. The coin detection unit 64 may be an IC card reader/writer device that collects purchase money (a consideration) for a game card from an electronic cash card (electronic wallet), such as Edy, WAON, Suica, PASMO, or nanaco. Also, the coin detection unit 64 may be an IC card reader/writer device that collects purchase money (a consideration) for a game card from a credit card. As described above, the coin detection unit 64 functions as a payment detection unit that detects payment of a consideration.

[0057]

When a card eject device 65 receives an eject command transmitted from the CPU 61, the card eject device 65 ejects one card from the card housing unit (not shown) to the card

eject unit 9. When the card eject device 65 detects the payment of the consideration, functions as an eject unit that ejects a card housed in the card housing unit.

[0058]

The display device 3 displays various images and information in response to a display command from the CPU 61. The IC card reader/writer device 4 reads information from an inserted IC card and transfers the information to the CPU 61, and writes information in an IC card in response to a write command from the CPU 61. The audio output device 5 outputs an effect sound and a voice message in response to an output command from the CPU 61. The audio output device 5 includes an audio circuit and a speaker. The code reader unit 6 reads a code drawn on the back surface of a game card mounted on a card arrangement field surface included in the code reader unit 6 and having transparency to light, and decodes the code; and recognizes the mounted position of the game card on the card arrangement field surface, generates coordinate data, and sends the decoded data and the coordinate data to the CPU 61. The card arrangement field surface corresponds to the above-described top plate and operating plate surface. The operation unit 7 includes a plurality of button switches, and sends a button operation signal indicative of whether each button is pressed or not, to the CPU 61.

[0059]

[Main Flow]

Fig. 18 is a flowchart showing game card selling processing. In S1801, the CPU 61 judges whether a coin is inserted or not. For example, the CPU 61 judges whether the CPU 61 receives the coin detection signal indicative of the detection of the coin from the coin detection unit 64. If the insertion of the coin is detected, the processing goes to S1802.

[0060]

In S1802, the CPU 61 displays a menu on the display device 3. The menu is for inquiry to a customer (a person who purchased a game card) about whether the customer only purchases the game card or the customer plays the game in addition to the purchase of the game card.

[0061]

In S1803, the CPU 61 judges whether the customer desires to play the game or not. For example, the CPU 61 judges whether a signal input from the operation unit 7 is a selection signal indicative of that the customer selects execution of only the purchase of the game card, or a selection signal indicative of that the customer selects play of the game in addition to the purchase of the game card. If the customer selects not to play the game, the processing goes to step S1820.

[0062]

In S1820, the CPU 61 transmits the eject command indicative of ejection of one game card, to the card eject device 65. When the card eject device 65 receives the eject command, the card eject device 65 ejects one game card.

[0063]

In S1821, the CPU 61 displays a coin insertion guidance on the display device 3. The coin insertion guidance contains, for example, a message indicative of that the customer can further purchase another game card if the customer inserts an additional coin.

[0064]

In S1822, the CPU 61 judges whether the coin is inserted or not. If a coin is inserted, the processing returns to S1820. In contrast, if an explicit signal indicative of that additional purchase is not made is input from the operation unit 7 to the CPU 61, or if insertion of the coin cannot be detected when a constant time has elapsed, the CPU 61 ends the game card selling processing relating to this flowchart.

[0065]

In contrast, if the customer selects to play the game in S1803, the processing goes to step S1804. The game according to the present invention is a match-up game in which a plurality of game characters are divided into an own

team and an enemy team and the own team and the enemy team are matched, and is a match-up game in which the CPU 61 judges that the own team loses if the sum total of physical power parameters indicative of physical powers of all game characters belonging to the own team becomes zero, and the CPU 61 judges that the own team wins if the sum total of physical power parameters indicative of physical powers of all game characters belonging to the enemy team becomes zero.

[0066]

In S1804, the CPU 61 displays an IC card insertion guidance on the display device 3. The IC card insertion guidance contains, for example, a message for promoting the customer to insert an IC card into the IC card reader/writer device 4. The IC card has unique identification information for identifying each IC card, avatar information indicative of an avatar (my game character) selected by the customer, a game parameter obtained by executing the game, and other information written therein. For example, it is assumed that the content of the game is that a plurality of game characters corresponding to a plurality of game cards mounted on the code reader unit 6 are matched against a plurality of game characters prepared by the CPU 61, an experience value of the customer-side game character is increased in accordance with the match-up result, and the experience value is reflected to the next and later games.

The my game character is selected by the customer.

[0067]

In S1805, when the IC card is inserted into the IC card reader/writer device 4, the CPU 61 reads the above-described various information from the IC card through the IC card reader/writer device 4. The various information contain information indicative of whether the my game character has been registered or not, as part of the avatar information.

[0068]

In S1806, the CPU 61 judges whether the my game character has been registered in the IC card or not based on the read avatar information. If the my game character has been registered, the processing goes to S1808. If the my game character has not been registered, the processing goes to S1807.

[0069]

In S1807, the CPU 61 executes processing of creating a my game character. The CPU 61 displays a plurality of game characters being candidates for the my game character, on the display device 3. Further, the CPU 61 displays a message for inquiry about which character is selected as the my game character, on the display device 3. When a selection signal indicative of selection of any one of the characters is input from the operation unit 7, the CPU 61 writes identification information indicative of the game

character corresponding to the selection signal into the IC card through the IC card reader/writer device 4. Further, the CPU 61 displays a message for promoting the customer to input a name which is given to the my game character from the operation unit 7, on the display device 3. The CPU 61 writes the name input through the operation unit 7, into the IC card through the IC card reader/writer device 4.

[0070]

In S1807, the CPU 61 transmits the eject command indicative of the ejection of one game card, to the card eject device 65. When the card eject device 65 receives the eject command, the card eject device 65 ejects one game card.

[0071]

In S1809, the CPU 61 displays the coin insertion guidance on the display device 3. The coin insertion guidance contains, for example, the message indicative of that the customer can further purchase another game card if the customer inserts an additional coin.

[0072]

In S1810, the CPU 61 judges whether a coin is inserted or not, by a judgment method similar to S1801. If a coin is inserted, the processing returns to S1808. In contrast, if an explicit signal indicative of that additional purchase is not made is input from the operation unit 7 to the CPU 61, or if insertion of a coin cannot be detected when a constant

time has elapsed, the processing goes to S1811. It is assumed that the CPU 61 counts the number of inserted coins and holds the count number in the RAM 63. An upper limit number may be set for the number of inserted coins. The number of inserted coins is correlated with the number of game cards. Hence, instead of counting the number of inserted coins, the number of ejected game cards may be counted. As described above, the CPU 61 functions as a count unit that counts the sum total of considerations detected by the payment detection unit or the number of cards ejected from the eject unit.

[0073]

In S1811, the CPU 61 executes parameter power-up processing. For example, the CPU 61 changes a game parameter so that the game is advantageously progressed in accordance with the number of inserted coins held in the RAM 63. For example, it is assumed that N bodies (for example, 10 bodies) of game characters who may appear in the game are present, and the maximum number of game characters who may participate in the own group are M bodies (for example, 5 bodies). That is, the customer can mount M game cards in hand simultaneously on the operation panel surface of the code reader unit 6. Based on this assumption, the CPU 61 controls a game parameter associated with at least one game character selected under a predetermined selection rule from

among a plurality of game characters who appear in the game. For example, the CPU 61 randomly selects at least one of the N bodies, and at least one of game parameters of the selected game character is increased depending on the purchased number. That is, the CPU 61 controls at least one game parameter selected under a predetermined selection rule from among a plurality of game parameters associated with a game character who appears in the game. A selection rule for determining a game parameter to be selected may be random. An identification number is assigned to a game parameter and a game character. The CPU 61 selects a game parameter or a game character to which an identification number corresponding to a number acquired by a random function is assigned. The present invention is not limited by the selection rule, and any selection rule may be employed. For example, the CPU 61 displays a plurality of game characters or a plurality of game parameters on the display device 3, and causes the customer to select a target of power-up. The CPU 61 executes the power-up for a game character or a game parameter corresponding to a selection instruction of the customer input through the operation unit 7. Alternatively, a game card mounted on the code reader unit 6 by the customer is detected, and the CPU 61 increases a game parameter of a game character corresponding to the detected game card. Accordingly, there is an advantage that

the customer easily selects the game character of the game card owned by the customer, as the target of the power-up.

[0074]

The CPU 61 may display an image of a selected game character, and a message indicative of an increased game parameter and the amount of increase, on the display device 3. The power-up of the game parameter depending on the purchased number is not limited to the current game. The CPU 61 adds a value of the power-up to the game parameter which is read from the IC card, but does not add a value of the power-up to a game parameter which is written into the IC card when the game is ended. That is, the value of the power-up bonus varies depending on the purchased number every time when the game is executed. However, for an experience value parameter, the CPU 61 increases the value depending on win or loss of the game, and is written into the IC card.

[0075]

As described above, the CPU 61 functions as a game parameter control unit that controls a game parameter which is used by the game function to be a value more advantageous to the customer as a count value counted by the count unit is larger. Also, the CPU 61 may delete the control result of the game parameter when the game is ended so that the power-up depending on the purchased number is limited to

only this time. The CPU 61 may not execute the control for the game parameter if the count value is a value corresponding to a consideration for one card, and may execute the control for the game parameter if the count value is a value corresponding to a consideration for at least two cards. That is, the CPU 61 does not execute the power-up if the purchased number is one, and executes the power-up if the purchased number is at least two.

Accordingly, more game cards are likely purchased.

According to the present invention, the customer can use the advantage given through the purchase of goods in the current game play. Also, the invention contributes to sales promotion for goods, for increasing the parameter depending on the purchased number of goods. In particular, if an incentive is not given when only one card is purchased and an incentive is given when two or more cards are purchased, the probability of that one customer purchases two or more cards is increased, and the sale is expected to be increased several times.

[0076]

Game characters who participate in the game are determined by arrangement of game cards on the top plate (the operation panel surface) of the code reader unit 6 by the customer. In some cases, the customer may not have a game card corresponding to a game character who is the

target of power-up, or the customer may not arrange the game card on the top plate (the operation panel surface). As described above, a code in which identification information is coded is printed on the back surface of each game card. Hence, the CPU 61 may judge whether or not the code acquired by the reading unit is a code indicative of a game character who is the target of the control for the game parameter, and if the code acquired by the reading unit is the code indicative of the game character who is the target of the control for the game parameter, the CPU 61 may increase a value of a game parameter associated with the game character.

[0077]

In S1812, the CPU 61 executes game processing. The detail of the game processing is described later.

[0078]

In S1813, the CPU 61 writes the game parameter updated in accordance with the result of the game, into the IC card through the IC card reader/writer device 4.

[0079]

In S1814, the CPU 61 transmits the eject command for ejecting the IC card to the IC card reader/writer device 4. When the IC card reader/writer device 4 receives the eject command, the IC card reader/writer device 4 ejects the IC card.

[0080]

[Flow of Game Processing]

Fig. 19 is a flowchart showing the game processing.
This flowchart corresponds to S1812.

[0081]

Fig. 20 is an illustration showing an example of a game card arrangement field and a display screen. As shown in Fig. 20, the game card arrangement field is provided on the top plate of the code reader unit 6. The top plate has transparency to light. Referring to Fig. 20, five cards are arranged on the game card arrangement field formed on the top plate of the code reader unit 6. The game card arrangement field includes three regions of a top region 72a, a middle region 72b, and a bottom region 72c. The customer plans a strategy for the game, by concerning the positions of the game cards on the game card arrangement field while the CPU 61 executes the game. The top region 72a and the middle region 72b are front regions of the field, and are attack zones. In contrast, the bottom region 72c is a rear region in the field, and is a support zone. The concept of the regions is applied to not only the game card arrangement field, but also a game field 70. That is, the regions of the game card arrangement field respectively correspond to the regions of the game field 70.

[0082]

A game character has a plurality of game parameters. A

physical power parameter is decreased when the game character receives an attack from an opponent. In this game, if physical powers of all game characters belonging to the own team become zero, or if physical powers of all game characters belonging to the opponent team become zero, the CPU 61 ends the game. An attack power parameter determines a damage (a decrease rate of a physical power parameter) which is given to an opponent by one attack. A defense power parameter cancels (decreases) a damage of an attack from an opponent by one defense. The attack power parameter and the defense power parameter are increased in association with an experience value parameter. The experience value parameter is stored in an IC card, and is increased by the CPU 61 every time when the game is played. A mental power parameter corresponds to a success rate of an attack and a rate of making an attack pattern with a high attack power. If a game card corresponding to a game character is arranged in the top region 72a, the CPU 61 decreases the mental power parameter by a first level over time. If a game card corresponding to a game character is arranged in the middle region 72b, the CPU 61 decreases the mental power parameter by a second level over time. Herein, the first level is a larger value than the second level. That is, if the game card is arranged at front, the attack power of the game character is increased; however, the mental power parameter

is decreased in return for the increase in attack power. The CPU 61 eliminates a game character from an attack order if the mental power parameter of the game character is zero, and causes the game character not to make an attack. However, if the CPU 61 detects that the game card of the game character is moved to the bottom region 72c, the CPU 61 increases the mental power parameter of the game character. That is, the bottom region 72c functions as a recovery area. As described above, the CPU 61 determines whether a game character makes an attack or makes a recovery of the mental power depending on the position of the game card in either of the three regions including the top region 72a, the middle region 72b, and the bottom region 72c. That is, the CPU 61 functions as action determining means for determining an action of each game character in the game based on the position of the operation member operated by an operator while the image of the field is displayed.

[0083]

In S1901, the CPU 61 displays a message for promoting the customer to arrange at least one game card on the game card arrangement field, on the display device 3.

[0084]

In S1902, the CPU 61 executes game card reading processing. For example, the code reader unit 6 reads a code formed on the back surface of the game card arranged on

the game card arrangement field through the top plate. The code reader unit 6 includes an image reading device, such as a CCD image pickup element or a C-MOS image pickup element, and an image focusing optical system that focuses an image of the code in the image reading device. The code reader unit 6 transfers image data indicative of the position of each game card on the game field and the code to the CPU 61. The code reader unit 6 may analyze the image and decode the code, and may calculate the position of the game card. However, in this case, it is assumed that the CPU 61 executes decoding and calculation.

[0085]

In S1903, the CPU 61 analyzes the image data received from the code reader unit 6, and specifies identification information of the game character. A two-dimensional code, such as a melon code, indicative of identification information of a game character is printed in the image data. Thus, by decoding the code, the CPU 61 can acquire the identification information of the game character.

[0086]

In S1904, the CPU 61 analyzes the image data received from the code reader unit 6, and specifies the position of each game card on the game card arrangement field. The image data is image data obtained by capturing an image of the game card arrangement field from below. Hence, the CPU

61 acquires coordinates of the two-dimensional code in the image data, and determines the acquired coordinates as the position of the game character.

[0087]

In S1905, the CPU 61 displays an image of a game character corresponding to each game card, on the display device 3. The ROM 62 stores image data and identification information corresponding to each of a plurality of game characters in an associated manner. The CPU 61 reads image data corresponding to the identification information of the game character decoded from the code, and displays the image data at a display position (display coordinates) on the display screen corresponding to an arrangement position (arrangement coordinates) of each game card on the game card arrangement field. As described above, the display device 3 functions as display means for displaying an image of a field corresponding to the operation panel surface, and an image of a game character corresponding to a code at display coordinates corresponding to a position of an operation member detected by the position detection means.

[0088]

Referring to Fig. 20, five cards are arranged on the game card arrangement field formed on the top plate of the code reader unit 6. One of five cards is a game card corresponding to a my game character. In this embodiment,

it is assumed that an IC card and a game card for calling a my game character are sold or lent in set. That is, IC-card identification information stored in an IC card and coded identification information printed on the back surface of a game card are the same or associated information. The coded information printed on the back surface of a game card may be a code for instructing the CPU 61 to call a my game character stored in an IC card.

[0089]

Referring to Fig. 20, a game card 35a and a game card 35b are arranged at left and center in the top region 72a. Hence, the CPU 61 displays a game character 71a corresponding to the game card 35a at left in an upper stage of the game field 70. Also, the CPU 61 displays a game character 71b corresponding to the game card 35b at center in the upper stage of the game field 70. As it is clear from Fig. 20, the game card arrangement field corresponds to the game field 70. That is, the ROM 62 stores a table for converting data of card arrangement coordinates in the game card arrangement field into data of display coordinates in the game field 70. The CPU 61 uses this table and converts arrangement coordinates of a game card into display coordinates of a game character. A game card 35c is arranged at right in the middle region 72b. Hence, the CPU 61 displays a game character 71c at right in a middle stage

of the game field 70. Game cards 35d and 35e are arranged at left and right in the bottom region 72c. Hence, the CPU 61 displays a game character 71d at left in a lower stage of the game field 70, and displays a game character 71e at right in the lower stage. The CPU 61 detects the position of each game card even during the game, and changes display coordinates of each corresponding game character in accordance with the detected position.

[0090]

The CPU 61 associates identification information of a game character corresponding to an operation member arranged on the operation panel surface with identification information of the own team, to cause the game character to belong to the own team. Referring to Fig. 20, codes read from the game cards 35a to 35e are associated with identification information indicative of the own team and stored in the RAM.

[0091]

In S1906, the CPU 61 determines game characters who form a computer-side team (enemy team) that the customer's own team makes a match-up in the game. For example, the CPU 61 selects game characters by the same number as the number of game cards arranged on the game card arrangement field using random numbers. Game parameters of the selected game characters are determined in accordance with the experience

value parameter of the customer read from the IC card. It is assumed that the ROM 62 stores an experience value parameter and game parameters of game characters in an associated manner. As described above, the game parameters of the own team and the game parameters of the opponent team are determined in accordance with the experience value parameter of the customer. Hence, both teams are close battle capabilities.

[0092]

In S1907, the CPU 61 reads image data of the selected opponent game characters from the ROM 62 and displays the image data on the display device 3. The CPU 61 may display game parameters of the respective game characters together with the image data of the opponent game characters, on the display device 3.

[0093]

In S1908, the CPU 61 executes match-up processing. The detail of the match-up processing is described later.

[0094]

In S1909, the CPU 61 displays a message or an image indicative of end of the game on the display device 3. The CPU 61 may display an experience value obtained by this game on the display device 3. Also, the CPU 61 may display a value of a friendship parameter which is one of game parameters. The friendship parameter indicates a

relationship between a my game character and another game character, and is increased by the CPU 61 every time when the my game character and the other game character plays a battle together in the same team. That is, when the game is ended, the CPU 61 writes identification information of the game card participated in the own team and the friendship parameter in the IC card in an associated manner. The CPU 61 may temporarily increase the rate of selecting an attack method with a high attack power if the friendship parameter exceeds a predetermined value.

[0095]

[Match-up Processing]

Fig. 21 is a flowchart showing match-up processing. The match-up processing has some features. A first feature is that, if a first game character is positioned in the attack zones (the top region 72a and the middle region 72b) and a second game character is positioned in the support zone (the bottom region 72c), the attack power of the first game character is increased. Accordingly, a production in which the second game character supports the attack of the first game character can be realized. If this condition is satisfied when the attack turn shifts to the defense turn, the defense power of the first game character may be increased.

[0096]

A second feature is that, as a game card is positioned at a further front position on the game card arrangement field, the attack power of the game character corresponding to the game card is increased. In the defense turn, as a game card is positioned at a further rear position on the game card arrangement field, the defense power of the game character corresponding to the game card may be increased.

[0097]

A third feature is switching the display screen such that the game field 70 is displayed on the display device 3 when the action of each game character is determined, and the game field is deleted during an attack or a defense and a game character who actually makes an attack and a game character who makes a defense are displayed.

[0098]

In S2101, the CPU 61 determines a game character who executes an attack in the attack turn of the own team. For example, if the own team includes i bodies of game characters, one game character is selected using random numbers. The CPU 61 may select a game character in order of game characters displayed in the top region 72a of the game field. If a plurality of game characters are displayed in the same region, the game character displayed at left may be selected first. Also, the CPU 61 selects one game character for a game character who is a target of the attack in the

opponent team using random numbers.

[0099]

In S2102, the CPU 61 deletes the display of the game field 70, and displays the game character selected from the own team and the game character selected from the opponent team in a close-up manner. As described above, when an attack scene or a defense scene in the game is displayed, the CPU 61 functions as display control means for deleting an image of the field and then switching the display to the image of the attack scene or the defense scene.

[0100]

Fig. 22 is an illustration showing an example of battle display. In the battle display, the game character 71b selected from the own team and a game character 73 selected from the opponent team are displayed on the display device 3 in a close-up manner.

[0101]

In S2103, the CPU 61 judges whether the game character selected from the own team is displayed in the top region 72a or not, based on the display coordinates of the selected game character or the arrangement coordinates of the corresponding game card. That is, if the position of an operation member is in a range from an end of the operation panel surface at a side far from the operator to a predetermined position, the CPU 61 recognizes that the

operation member is arranged in a front region. If the game character is displayed in the top region 72a, the processing goes to S2104.

[0102]

In S2104, the CPU 61 increases the attack power parameter from among game parameters of the selected game character by a predetermined value a1. The ROM 62, which is the storage device, stores the physical power parameter and the attack power parameter indicative of a damage to the opponent team when an attack is given to the opponent team, as game parameters for each of the plurality of game characters. The respective game parameters are read from the ROM 62 during execution of the game, and are held in the RAM 63. The CPU 61 controls the attack power parameter of the game character belonging to the own team to a higher value as the operation member corresponding to the game character is arranged at a further front position on the operation panel surface. As described above, the CPU 61 functions as game parameter control means for controlling a game parameter associated with a game character depending on the position of an operation member with respect to the operation panel surface.

[0103]

In S2105, the CPU 61 decreases the mental power parameter from among the game parameters of the selected

game character by the predetermined value a1. As described above, the CPU 61 decreases the value of the mental power parameter over time, the mental power parameter being indicative of a mental power from among the game parameters of the game character corresponding to the operation member arranged in the front region of the operation panel surface. Accordingly, the increase amount of the attack power parameter and the decrease amount of the mental power parameter have a relationship of trade-off. With this relationship, the customer can have fun of thinking the strategy for the game.

[0104]

In S2106, the CPU 61 judges whether or not another game character is present at rear of the selected game character, or in the bottom region 72c. This judgment is executed if images of a plurality of game characters, which respectively correspond to a plurality of operation members when the plurality of operation members are arranged on the operation panel surface, are displayed on the display means. Also, this judgment can be executed by comparing the display coordinates of the game characters with each other, or by comparing the arrangement coordinates of the corresponding game cards with each other. As shown in Fig. 20, another game character 71d is present in the bottom region 72c at rear of the game character 71a. Hence, the CPU 61 judges

that a rear support character is present for the game character 71a. Similarly, the CPU 61 judges that a rear support character is present for the game character 71c. In contrast, as shown in Fig. 20, another game character is not present in the bottom region 72c at rear of the game character 71b. Hence, the CPU 61 judges that a rear support character is not present for the game character 71b. If a rear support character is present, the processing goes to S2107, and if not present, the processing skips S2107 and goes to S2108.

[0105]

In S2107, the CPU 61 increases the attack power parameter by a predetermined value a3. As described above, from among the plurality of game characters, if the CPU 61 judges that the display coordinates of the image of the first game character are arranged at front of the field and the display coordinates of the image of the second game character are arranged at rear (or rear and directly behind) in the field, the CPU 61 changes the game parameter of the first game character in the game to a value that is advantageous to the operator (the customer). It is to be noted that a1 and a3 may be the same value or different values. The CPU 61 may display an image indicative of that the rear game character supports the front game character when the CPU 61 increases the attack power parameter.

[0106]

Fig. 23 is an illustration showing an example of a support production. The CPU 61 displays an image 74 indicative of that the game character 71a relatively positioned at front is supported by the game character 71d relatively positioned at rear, on the display device 3.

[0107]

In S2108, the CPU 61 executes attack processing. In the attack processing, the CPU 61 determines a difference between an attack power parameter atk of an attack-side game character and a defense power parameter def of a defense-side game character, as a damage value. The damage value may be multiplied by a predetermined coefficient. The CPU 61 subtracts the damage value from the physical power parameter of the defense-side game character.

[0108]

In S2109, the CPU 61 judges whether the own team wins or not. The CPU 61 functions as means for judging win or loss by judging which one of the sum total of the own team and the sum total of the enemy team becomes zero first. Also, the CPU 61 functions as means for calculating the sum total of the physical power parameters of all game characters belonging to the enemy team. Further, the CPU 61 judges whether or not the sum total of the physical power parameters of all game characters forming the opponent team

becomes zero. If the sum total is zero, the CPU 61 judges that the own team wins. If the own team wins, the processing goes to S2112. If the own team does not win yet, the processing goes to S2110.

[0109]

In S2110, the CPU 61 executes defense processing against the attack from the opponent team. The detail of the defense processing is described later. When the defense processing is ended, the processing goes to S2111.

[0110]

In S2111, the CPU 61 judges whether the own team loses or not. The CPU 61 functions as means for calculating the sum total of the physical power parameters of all game characters belonging to the own team. For example, the CPU 61 judges whether or not the sum total calculated by adding the physical power parameters of all game characters forming the own team becomes zero. If the sum total is zero, the CPU 61 judges that the own team loses. If the own team loses, the processing goes to S2112. If the own team does not lose yet, the processing returns to S2101. In S2101, the CPU 61 displays the game field 70 and the respective game characters, and selects a game character who executes the next attack. The subsequent processing is similar to the above-described processing.

[0111]

In contrast, if it is judged that the selected game character is not present in the top region 72a in S2103, the processing goes to S2120.

[0112]

In S2120, the CPU 61 judges whether the selected game character is present in the middle region 72b, based on the display coordinates of the selected game character or the arrangement coordinates of the corresponding game card. If the position of the operation member is in the range from the end of the operation panel surface at the side far from the operator to the predetermined position, the CPU 61 recognizes that the operation member is arranged in the front region. If the selected game character is present in the middle region 72b, the processing goes to S2121.

[0113]

In S2121, the CPU 61 increases the attack power parameter of the selected game character by a predetermined value a2. Herein, a2 is a smaller value than a1. Hence, in this embodiment, as the game character is positioned at a further front position on the game field, the attack power parameter is increased. As described above, the CPU 61 functions as game parameter control means for controlling a game parameter associated with a game character depending on the position of an operation member with respect to the operation panel surface.

[0114]

In S2122, the CPU 61 decreases the mental power parameter of the selected game character by the predetermined value a2. That is, the CPU 61 decreases the value of the mental power parameter over time, the mental power parameter being indicative of the mental power from among the game parameters of the game character corresponding to the operation member arranged in the front region of the operation panel surface. Since a2 is the smaller value than a1, the decrease rate of the mental power parameter of the game character present in the middle region 72b is smaller than the decrease rate of the mental power parameter of the game character present in the top region 72a. Then, the processing goes to S2106.

[0115]

In contrast, if it is judged that the selected game character is not present in the middle region 72b in S2120, the processing goes to S2130. That is, in this case, it is judged that the selected game character is present in the bottom region 72c. Hence, if the position of an operation member is in a range from an end of the operation panel surface at a side close to the operator to the predetermined position, the CPU 61 recognizes that the operation member is arranged in a rear region.

[0116]

In S2130, the CPU 61 increases the mental power parameter of the selected game character by a predetermined value c1. That is, the mental power of the game character, the game card of which is arranged in the bottom region 72c, is recovered by c1. As described above, the CPU 61 functions as means for recovering the value of the mental power parameter of the game character corresponding to the operation member arranged in the rear region of the operation panel surface with time while the operation member is arranged in the rear region. Then, the processing goes to S2110.

[0117]

Fig. 24 is a flowchart showing an example of defense processing. This defense processing corresponds to S2110.

[0118]

In S2401, the CPU 61 determines a game character who executes a defense in the defense turn of the own team. A display screen at this time is shown in Fig. 22. Also, the CPU 61 determines an attack execution character in the opponent team. If the opponent team includes i bodies of game characters, one game character is selected using random numbers.

[0119]

In S2402, the CPU 61 judges whether the game character selected from the own team is displayed in the top region

72a or not, based on the display coordinates of the game character. If the game character is displayed in the top region 72a, the processing goes to S2403.

[0120]

In S2403, the CPU 61 decreases the mental power parameter from among the game parameters of the selected game character by the predetermined value a1.

[0121]

In S2404, the CPU 61 judges whether or not another game character is present at rear of the selected game character, or in the bottom region 72c, based on the display coordinates. This judgment is judgment processing similar to S2106. If a rear support character is present, the processing goes to S2405, and if not present, the processing skips S2405 and goes to S2406.

[0122]

In S2405, the CPU 61 increases the defense power parameter by a predetermined value b1. The CPU 61 may display an image indicative of that the rear game character supports the front game character when the CPU 61 increases the defense power parameter (Fig. 23).

[0123]

In S2406, the CPU 61 executes defense calculation and defense display. In the defense processing, the CPU 61 determines a difference between an attack power parameter

atk of an attack-side game character and a defense power parameter def of a defense-side game character, as a damage value. The damage value may be multiplied by a predetermined coefficient. The CPU 61 subtracts the damage value from the physical power parameter of the defense-side game character. Then, the processing goes to S2111 shown in Fig. 21.

[0124]

In contrast, if it is judged that the selected game character is not present in the top region 72a in S2402, the processing goes to S2410.

[0125]

In S2410, the CPU 61 judges whether the selected game character is present in the middle region 72b or not. If the selected game character is present in the middle region 72b, the processing goes to S2411.

[0126]

In S2121, the CPU 61 increases the defense power parameter of the selected game character by a predetermined value b2. As described above, the defense power parameter is not increased for the game character positioned in the top region 72a. That is, as the game character is positioned at a further rear position, the defense power is increased.

[0127]

In S2412, the CPU 61 decreases the mental power parameter of the selected game character by the predetermined value a2. Since a2 is the smaller value than a1, the decrease rate of the mental power parameter of the game character present in the middle region 72b is smaller than the decrease rate of the mental power parameter of the game character present in the top region 72a. Then, the processing goes to S2404.

[0128]

In contrast, if it is judged that the selected game character is not present in the middle region 72b in S2410, the processing goes to S2420.

[0129]

In S2420, the CPU 61 increases the defense power parameter of the selected game character by a predetermined value b3. Herein, b3 is a larger value than b2. That is, the increase rate of the defense power parameter of the game character present in the bottom region 72c is larger than the increase rate of the defense power parameter of the game character present in the middle region 72b.

[0130]

In S2421, the CPU 61 increases the mental power parameter of the selected game character by the predetermined value c1. That is, the mental power of the game character, the game card of which is arranged in the

bottom region 72c, is recovered by c1. Then, the processing goes to S2406.

[0131]

According to the present invention, the game character corresponding to the code read from the operation member arranged on the operation panel surface by the customer is displayed depending on the position of the operation member, and the game parameter is controlled depending on the position. That is, the game parameter of the game character can be controlled depending on the position of the operation member with respect to the operation panel surface.

[0132]

In particular, according to the present invention, the game card is sold to the customer and the game card is used as the operation member, and the display device displays the game character corresponding to the game card. Accordingly, with the present invention, the customer can have pleasure in collection, which cannot be provided by a virtual card merely displayed on a display device. Since the game card is the operation member, the customer can pick up the game card in hand and directly move the game card. Further, with the present invention, the game parameter of the game character can be controlled depending on the position of the real card arranged by the customer.

[0133]

Further, with the present invention, since the vanguard and the rear guard can be realized in the match-up game on the operation panel surface, the customer can likely feel the realism of the match-up. In particular, since the attack power is increased as the position of the operation member is at a further front position on the operation panel surface, the customer can more easily sensuously make a plan of an attack formation. Also, if the game character serving as the rear guard is present at rear of the game character serving as the vanguard, by increasing the game parameter of the game character serving as the vanguard, the support for the vanguard by the rear guard can be added to the strategy for the game. In particular, if the support is executed when the rear guard is arranged directly behind the vanguard, the customer can more likely feel the support relationship between the game characters.

[0134]

Since the mental power parameter is introduced, it is difficult to make an effective attack unless the game character is arranged at front when the mental power of the game character is sufficient. Hence, the variety of the strategy for the match-up game can be increased.

[0135]

Further, when arrangement of the respective game characters is determined, the game field 70 and the

respective game characters are displayed. In the attack or defense scene, the game field is deleted and the game characters for the match-up are displayed in a close-up manner. Accordingly, the game characters for the match-up are clear, and the attack or defense scene of the game can be produced for dynamic change of the display screen.

[0136]

<Display of Series>

As a sales strategy of game cards, game cards may be provided by a series. For example, game cards with designs of game characters in basic forms (for example, before growth) may be sold in a first series, and game cards with designs of game characters in other forms (for example, after growth) may be sold in a second series. Also, the duration of each series may be designated, for example, from August 1 to August 31 and the series is advertised. If a game card of the previous series is ejected even in the period of the next series, the customer may be disappointed. Hence, the owner of the article selling device has to care about the series of the card now on sale. That is, if the owner can recognize the current series by an easy method as possible, the owner is very convenient.

[0137]

If a game card is mounted on the game card arrangement field when the article selling processing or the game is not

executed, the CPU 61 causes the code reader unit 6 to read the code of the game card. The ROM 62 has a series management table. In the series management table, identification information belonging to each series is previously registered. That is, the ROM 62 functions as a storage device that stores a code of an operation member and series information indicative of a series number of the operation member in an associated manner. Hence, the CPU 61 acquires information indicative of the series corresponding to the identification information of the game card acquired through the code reader unit 6, from the series management table. The CPU 61 displays the information indicative of the series on the display device 3. As described above, if the code of the operation member is read by the reading means when the game is not executed, the CPU 61 functions as series information display control means for reading the series information corresponding to the code and displaying the series information on the display means.

[0138]

Fig. 25 is an illustration showing a display example of series information. A game card 35d is arranged on the game card arrangement field. A code printed on the back surface of the game card 35d contains identification information indicative of that the game card is a card of a first series. Hence, the CPU 61 displays series information 75 indicative

of that the game card is of the first series, on the display device 3. Accordingly, the owner of the article selling device can supply game cards in the article selling device while checking the current series.

[Name of Document] CLAIMS

[Claim 1]

An article selling device having a game function that executes a game when an article is purchased by a customer, the machine comprising:

an article housing unit that houses a plurality of articles;

a payment detection unit that detects payment of a consideration;

an eject unit that ejects an article housed in the article housing unit if the payment of the consideration is detected;

a count unit that counts the sum total of considerations detected by the payment detection unit or the number of articles ejected by the eject unit; and

a game parameter control unit that controls a game parameter, which is used by the game function in a current game play, to be a value more advantageous to the customer as a count value counted by the count unit is larger.

[Claim 2]

The article selling device according to claim 1, wherein the game parameter control unit controls a game parameter associated with at least one game character who is selected under a predetermined selection rule from among a plurality of game characters who appear in the game.

[Claim 3]

The article selling device according to claim 1 or 2, wherein the game parameter control unit controls at least one game parameter which is selected under a predetermined selection rule from among a plurality of game parameters associated with a game character who appears in the game.

[Claim 4]

The article selling device according to any of claims 1 to 3,

wherein the payment detection unit detects insertion of a coin into the article selling device for the purchase of the article, and

wherein the count unit counts the number of coins detected by the payment detection unit.

[Claim 5]

The article selling device according to any of claims 1 to 4, wherein the game parameter control unit does not execute the control for the game parameter if the count value is a value corresponding to a consideration equivalent to one article, but executes the control for the game parameter if the count value is a value corresponding to a consideration equivalent to at least two articles.

[Claim 6]

The article selling device according to any of claims 1 to 5, further comprising:

a top plate on which at least one article is mounted and which has transparency to light;

a reading unit that reads a code provided at the article; and

a display unit that displays an image of a game character corresponding to the code,

wherein the game parameter control unit judges whether or not the code acquired by the reading unit is a code indicative of a game character who is a target of the control for the game parameter, and

if the code acquired by the reading unit is the code indicative of the game character who is the target of the control for the game parameter, increases a value of a game parameter associated with the game character.

[Claim 7]

The article selling device according to any of claims 1 to 6, wherein the game parameter control unit deletes a result of the control for the game parameter when the game is ended.