Description

[Title of Invention] Card Shoe Apparatus and Table Game System

[Technical Field]

[0001]

The present invention relates to a card shoe apparatus and a table game system with a function of preventing cheating in a card game played with playing cards (hereinafter simply referred to as "cards") such as baccarat.

[Background Art]

[0002]

In poker, baccarat, bridge, blackjack, and other card games, a dealer sets one or more decks of playing cards in a card shoe or the like, and deals cards to game players by drawing out the cards one by one out of the card shoe or the like. In doing so, to ensure fairness in the games, the cards need to be dealt at random. Therefore, a game host has to sufficiently shuffle the playing cards randomly in order to ensure a random order of arrangement of the playing cards before they are set in the card shoe.

[Citation List]

[0003]

A conventional card shuffling device for shuffling cards is disclosed in, for example, Patent Literature 1.

Patent Literature 1: WO 2009/069708

[Summary of Invention]

[Technical Problem]

[0004]

The shuffled playing cards used in various card games such as poker, baccarat, bridge or blackjack include, ordinarily, 416 cards if eight decks of cards are used, and we cannot completely eliminate the possibility of the occurrence of a state in which such shuffled playing cards are arranged not in a random order but in a specific order instead (for example, a state of ten consecutive Ace cards) for some reason. If a set of cards that has not been sufficiently shuffled to be arranged in a random order is set in a card shoe or the like and used in a game, the fairness of the game may not be secured, which is a problem. In a card game, the arrangement order of the cards that are drawn during the game is important; the cards are drawn in such an order and the winner/loser of the game is also decided by the arrangement order.

[0005]

The present invention has been made in view of the above problems, and aims to provide a card shoe and a table game system capable of detecting a state in which the shuffled playing cards to be used in a card game are not randomly arranged when the card shoe deals the cards onto the game table, thereby preventing the condition of an unfair game, and the dealing of cards of a card set arranged in a specific order, which thus, should not be dealt onto the game table, as well as a method therefor.

[0006]

[Solution to Problem]

To solve the above conventional problems, the present invention provides a table game system including:

shuffled playing cards made up of a predetermined number of cards, the cards having been shuffled in advance, each card with information representing a rank thereof as a code that is normally invisible; and,

a card shoe apparatus for storing the shuffled playing cards on a game table and manually dealing the cards housed in the card shoe apparatus one by one onto the game table,

wherein the card shoe apparatus includes:

a card housing unit for housing the shuffled playing cards;

an opening for drawing out the cards from the card housing unit one by one

a card reading unit that reads the code provided in the card drawn from the card housing unit onto the game table,

a control unit that stores rules of a card game, and determines the winner/loser of the card game according to said rules, based on the information of the cards read by the card reading unit; and

a output unit that outputs a result of the winner/loser determined by the control unit, and

the control unit has a shuffling checking function of storing the information of the cards read by the card reading unit for a predetermined number of cards, detecting an irregularity in the arrangement order of the shuffled playing cards housed in the card housing unit based on the information of the cards read by the card reading unit, and outputting an irregularity alarm,

the irregularity in the arrangement order of the shuffled playing cards being at least one of the following cases:

(a) a case where a state in which the rank of a card is larger (or smaller) by one than the card preceding that card continues for a predetermined number of cards (for example, 1, 2, 3, 4, ---, K);
(b) a case where cards with the same rank continue for a predetermined number of cards (for example, A, A, A, A, ---);
(c) a case where the same sequence is repeated throughout a predetermined number of cards (for example, A, Q, 10, A, Q, 10, ---);
(d) a case where cards with the same suit continue for at least a predetermined number of cards (for example, 13 consecutive cards with Hearts);
(e) a case where the arrangement order of a predetermined number of cards matches an arrangement order registered in advance;
(f) a case where a state in which a card drawn has the same suit and rank as the card that precedes the card drawn by 52 cards continues for a plurality of cards; and
(g) a case that corresponds to a case that has been registered in advance as an irregular case.

[0007]

[Advantageous Effects of Invention]

With the present invention, it is possible to provide a table game system capable of detecting a state in which the shuffled playing cards to be used in a card game are not randomly arranged when a card shoe deals the cards onto a game table, thereby preventing the condition of an unfair game, and the dealing of a predetermined number or more of cards of a card set arranged in a specific order, which thus, should not be dealt.

[0008]

[Brief Description of Drawings]

[Fig. 1] Fig. 1 is a perspective view schematically showing the entirety of a table game system according to an embodiment of the present invention.
[Fig. 2] Fig. 2 is a perspective view of shuffled playing cards to be used in the table game system according to the embodiment.
[Fig. 3] Fig. 3 is a plan view of a card according to the embodiment of the present invention.
[Fig. 4] Fig. 4 is a diagram showing a general configuration of the card shoe apparatus.
[Fig. 5] Fig. 5(a) is a plan view showing an example of an irregularity in the arrangement order of cards detected by the card shoe apparatus, and Fig. 5(b)

is a plan view showing another example of an irregularity in the arrangement order of cards.

[Fig. 6] Fig. 6 is a plan view of a card guide of the card shoe apparatus in which main portions are enlarged and the card guide is partially broken.

[Fig. 7] Fig. 7 is a diagram showing the relation between output waves from sensors and marks in the card shoe apparatus.

[Fig. 8] Fig. 8 is a diagram showing a general configuration of the card shoe apparatus.

[Fig. 9] Each of Figs. 9 (a) and (b) is diagram showing a embodiment of the card movement restriction means.

[Description of Embodiments]

[0009]

An embodiment of a table game system of the present invention will be described below. Fig. 1 is a perspective view schematically showing the entirety of a table game system according to the present embodiment. Fig. 2 is a perspective view of shuffled playing cards to be used in the table game system of the present embodiment. A shuffled playing card set 1s used in the table game system of the present embodiment is provided in a state in which cards 1 made up of a predetermined number of decks (normally, 6, 8 or 10 decks) have been shuffled and randomly arranged. On the game table, the shuffled playing card set 1s is housed in a card shoe apparatus 2 bundled with a band (B), and thereafter, the band (B) is undone and removed such that the cards 1 of the shuffled playing cards 1s can be dealt one by one. During a game, a dealer deals the cards 1 onto the game table out of the card shoe apparatus 2.

[0010]

A cut card 1c is inserted in the shuffled playing card set 1s before it is set in the card shoe apparatus 2. The cut card 1c is inserted at any place within the latter half portion of the shuffled playing card set 1s when used in a game (in the last quarter or one-fifth of the shuffled playing card set 1s). The cut card 1c is used to end a game at the game table leaving about 20 to 40 cards 1 in the card shoe apparatus 2, so as to prevent any player from counting the ranks of the cards 1 dealt during a game to predict the ranks of the cards when the number of the cards that have not been dealt yet becomes small. Fig. 3 shows the cards 1 which form the shuffled playing cards. A figure is encoded and printed in UV ink or the like, which is invisible under normal conditions, on each card 1 that is used in table games such as baccarat. In Fig. 3, codes 3, each of

which is configured with marks M, are provided in the upper and lower sides of the card 1 in a point-symmetric manner.

[0011]

In Fig. 4, the card shoe apparatus 2 of the table game system of the present embodiment includes a card guide unit 7 that guides the cards 1 that are drawn one by one out of a card housing unit 5 onto a game table 6, and a code reading unit 8 that reads from a card 1, when the card 1 is drawn from the card housing unit 5, the code 3 that indicates the figure (number, rank) of that card 1. The card shoe apparatus 2 further includes a control unit 12 that stores the rules of a card game for determining the winner/loser of the card game (in this example, the baccarat game), and determines the winner/loser based on the numbers (ranks) of the cards 1 read by the code reading unit 8. The control unit 12 stores the rules of a card game in a memory 12M to be described below, and determines the winner/loser between the player and the banker based on the total of the numbers (ranks) of their hands, each hand consisting of several cards 1 that were dealt. An output means 11 (configured from a plurality of lamps) displays the result of this determination.

[0012]

The control unit 12 includes the memory 12M that stores the information of a predetermined number of cards 1 read by the card reading unit 8, with which the control unit 12 stores the arrangement order of the cards of the shuffled playing cards 1s, and has a function of detecting any irregularity described below. Upon the detection of an irregularity in the arrangement order of the cards of the shuffled playing cards 1s housed in the card housing unit 5, the management division or the pit of the casino is notified thereof by an arrangement order irregularity alarm through an external output means 100. In addition, arrangement order irregularity lamps 101 and a liquid crystal display unit 102 exhibit the irregularity in the cards 1, thereby informing a dealer or the like thereof. A wired or wireless communication means is used as a means of outputting the irregularity alarm.

[0013]

Note that the irregularity alarm is given by a two-phase alarm system. In the first phase, an alarm is displayed in the liquid crystal display unit 102, which is a side display of the card shoe apparatus 2, upon the detection of an irregularity such that only the dealer who has the role of dealing the cards can know the irregularity. Next, in the second phase, the irregularity alarm is given

as a final irregularity display at the end of the game during which the irregularity occurs. In this case, an arrangement order irregularity alarm is given to the management division or the pit of the casino through the external output means 100, and in addition, the arrangement order irregularity lamp(s) 101 is(are) lighted to indicate the irregularity in the arrangement order of the cards 1.

[0014]

Next, an irregularity in the arrangement order of the cards will be described. Fig. 5(a) and Fig. 5(b) each show a typical example of an irregularity in the arrangement order of the cards. Fig. 5(a) shows an example where the cards 1 drawn from the card housing unit 5 have the same suit (Clubs) with sequential figures (number, rank) beginning from Ace. Fig. 5(b) shows an example where the cards 1 drawn from the card housing unit 5 consist of 9 cards with the same rank (3). Generally, the cards of the shuffled playing cards 1s are shuffled by a random number generator or the like so as to be arranged in a random order. The arrangement order as shown in Figs. 5(a) and 5(b) indicates an irregular shuffling of the shuffled playing card set 1s, which is thus determined to be irregular. Including the examples described above, possible examples of an irregularity in the arrangement order are listed below:

(a) a case where a state in which the rank of a card is larger (or smaller) by one than the card preceding that card continues for a predetermined number of cards (for example, 1, 2, 3, 4, ---, K) (as shown in Fig. 5(a));

(b) a case where cards with the same rank continue for a predetermined number of cards (for example, A, A, A, A, ---) (as shown in Fig. 5(b));

(c) a case where the same sequence is repeated throughout a predetermined number of cards (for example, A, Q, 10, A, Q, 10, ---);

(d) a case where cards with the same suit continue for at least a predetermined number of cards (for example, 13 consecutive cards with Hearts); and

(e) a case where the arrangement order of a predetermined number of cards matches an arrangement order registered in advance (this is a case where the arrangement order used in a separate card manufacturing process appears, which case can also be considered irregular (shuffling failure)).

[0015]

These irregular patterns are stored in the memory 12M in advance, and the control unit 12 compares the information of the cards 1 read by the card reading unit 8 with such patterns. If the arrangement order of a predetermined number of cards 1 matches any of these irregular patterns, it is determined to

be irregular.

[0016]

A sample case of an irregularity in the arrangement order of the shuffled playing cards described in (e) above, where the arrangement order of a predetermined number of cards matches an arrangement order that has been registered in advance, is a case where the state in which the suit and rank of a card drawn are the same as those of the card preceding it by 52 cards continues for a plurality of cards. This is to enable the detection of an irregular case where a shuffling of a plurality of decks has failed for some reason, and instead each of the 52 cards is arranged in the same arrangement order. Note that as another example of an irregularity in the arrangement order, the arrangement order of the cards used when manufacturing the cards, and which is unique to the card manufacturing process may be defined as an irregular case, and stored in advance.

[0017]

Further, as a example of an irregularity in the arrangement order of the shuffled playing cards includes (g) a case where a state in which a card drawn has the same sequence of suit and rank as at least a part of the cards that have been read preceding set of the game continues for a plurality of cards or for games.

[0018]

In this case, the card shoe apparatus 2 stores at least several sets ("8 decks" times "several sets") of the sequence of the suit and the rank in a result of reading cards previously.

[0019]

According to such a embodiment, the case where the cards which were previously used are not disposed and illegally reused (where the sequence of the cards which were previously read re-appears) can be found as shuffle-irregular.

[0020]

An irregularity in the arrangement order of the shuffled playing cards refers to a case where an irregular state continues throughout a predetermined number of cards. It is further preferable that a preliminary alarm of irregularity is given, as a stage prior to the occurrence of an irregularity in the arrangement order, during the card that is several cards before the end of a predetermined number of cards. The preliminary alarm is given in a form different from the final

alarm, for example, by characters, in a certain color, or with a different lamp. Also, since it is a preliminary alarm, if a state does not continue to be irregular throughout a predetermined number of cards and returns to a random state, then the preliminary alarm is cancelled.

[0021]

Next, the code reading unit 8 that reads the code 3 from a card 1 will be described in detail with reference to Fig. 6. Fig. 6 is a plan view in which main portions of the card shoe apparatus 2 are enlarged. In Fig. 6, some portions are enlarged for the purpose of description, and thus Fig. 6 does not necessarily accurately reflect the relative scale. The code reading unit 8 is provided in the card guide unit 7 that guides the cards 1 drawn one by one from the opening 13 of the card housing unit 5 onto the game table 6, with the opening 13 provided in a front portion of the card housing unit 5. The card guide unit 7 is an inclined surface, and a card guide 14 is attached to a portion of the edge of each of both sides thereof, with the card guide 14 also serving as a sensor cover. Also, each of the two card guides 14 is configured to be attachable/detachable with screws or the like (not shown). When a card guide 14 is removed, a sensor group 15 of the code reading portion 8 is exposed. The sensor group 15 is composed of four sensors, including two ultraviolet reactive sensors (UV sensors) 20 and 21, and object detection sensors 22 and 23.

[0022]

The object detection sensors 22 and 23 are optical fiber sensors that each detect the presence of a card 1. The object detection sensor 22 is placed in the upstream side of the card guide unit 7 relative to the travel direction of the card 1, and the object detection sensor 23 is placed in the downstream side of the card guide unit 7 relative to the travel direction of the card 1. As shown in Fig. 6, the object detection sensors 22 and 23 are provided in the upstream and downstream sides of the UV sensors 20 and 21, respectively. Each of the UV sensors 20 and 21 includes an LED (UV LED) that emits an ultraviolet ray and a detector. The marks M are printed on the card 1 in UV luminescent ink that emits color when UV ray is applied. The card 1 is irradiated with the UV ray (black light), and the detector detects the light reflected by the marks M of the code 3 of the card 1. The UV sensors 20 and 21 are connected to the control unit 12 of the code reading unit 8 via a cable. In the code reading unit 8, the arrangement patterns of the marks M are determined based on the output signals of the detectors of the UV sensors 20 and 21, and the number (rank)

corresponding to the code 3 is determined.

[0023]

In the code reading unit 8, the start and end of the reading performed by the UV sensors 20 and 21 are controlled by the control unit 12 based on the detection signals from the object detection sensors 22 and 23. Also, the control unit 12 determines whether the card 1 has normally passed through the card guide unit 7 based on the detection signals from the object detection sensors 22 and 23. As shown in Fig. 3, the rectangular marks M are arranged within a framework of two rows with four columns on each of the upper and bottom edges of the card 1, and the arrangement of such marks M indicates the rank (number) and the suit (Heart, Spade or the like) of the card 1. If the UV sensor(s) 20 and/or 21 detect(s) a mark M, such UV sensor(s) give(s) out an on signal. The code reading unit 8 determines the relative relation between the signals received from the two UV sensors 20 and 21. By this way, the code reading unit 8 identifies the code based on the relative difference or the like between the two marks M detected by the two UV sensors 20 and 21, thereby identifying the number (rank) and the type (suit) of the corresponding card 1.

[0024]

The relation between the code 3 and the output of the on signals of the two UV sensors 20 and 21 are shown in Fig. 7. It is possible to identify a predetermined arrangement pattern of the marks M based on the comparison results of the relative changes in the output of the on signals of the UV sensors 20 and 21. As a result, in two rows (the upper and lower rows), four types of arrangement patterns of the mark M are possible, and since patterns are printed in four columns, it is possible to form 256 types of codes (4 x 4 x 4 x 4). Fifty two (52) different playing cards are each assigned to one of the 256 codes, and the relations of such assignment are stored in a memory or by a program as an association table. A configuration is thereby adopted in which the card reading unit 8 can, by identifying the code 3, identify the number (rank) and the type (suit) of the card 1 based on that predetermined association table (not shown). Also, 52 cards can be freely associated with 52 codes out of the 256 codes to be stored in the association table, and thus, there will be a variety of associations between them. Therefore, it is possible to change the associations between the 256 codes and the 52 cards depending on the time or place. Preferably, the code is printed with a paint material that becomes visible when irradiated with a UV ray, and placed in a position where it does not overlap the

indications of the card types or indexes 102.

[0025]

Next, the configuration of the control unit 12 will be described in further detail. The control unit 12 and the like are achieved by a computer apparatus. For example, the process function of automatically determining the winner/loser of a game (in the control unit 12) is achieved by installing in a computer a program for determining the winner/loser, and that program is executed by a processor of the computer. The numbers of the cards sequentially taken out onto the game table 6 are acquired using the UV sensors 20 and 21 in the code reading unit 8, and the numbers of the cards thus acquired are stored sequentially in the memory 12M. At this point, information on which card 1 is dealt in what order to which player is also stored. The dealing order of the number and suit of the cards are stored. Although the cards of the shuffled playing card set 1s have generally been shuffled in advance by a random number generator or the like so as to be arranged in random, if any of the irregular patterns described above appears, it indicates the possibility of an irregular shuffling of the shuffled playing card set 1s. The arrangement orders of the cards that should be determined as irregular patterns are stored in the memory 12M in advance or programmed such that the control unit 12 compares the information on the actual arrangement order of the cards 1 that were read by the card reading unit 8 and dealt with the irregular patterns, and if a predetermined number of the cards 1 are drawn in any irregular pattern, it is determined to be irregular.

[0026]

As shown in Figs. 8 and 9, the card shoe apparatus 2 comprises the card movement restriction means 30 that restricts the movement of the card 1 to/from the card housing unit 5. In Fig. 9(a), the card movement restriction means 30 is provided in the card guide 14 of the card guide unit 7 that guides the cards 1 taken out one by one from the opening 3, which is provided in a front portion of the card housing unit 5. The card movement restriction means 30 has a structure by which when a card 1 passes through a slot 33 between the card guide unit 7 and the card guide 14, a lock member 34 presses the card 1 to prohibit the movement of the card 1 within the slot 33. The lock member 34 is capable of moving in the direction indicated by the arrow M by a driving unit 35 composed of an electromagnetic solenoid, a piezoelectric device or the like, such that it can take two positions, namely, a position where the card 1 is

pressed (restricted position) and a position where the card 1 is allowed to pass through. The driving unit 35 is controlled by the control apparatus 12, and causes the lock member 34 to move to two positions, namely, a position where the card 1 is pressed and a position where the card 1 is allowed to pass through. The rules of the baccarat game are programmed and stored in advance in the control apparatus 12.

[0027]

Next, an alternative embodiment of the card movement restriction means 30 will be described with reference to Fig. 9(b). According to this embodiment, a card movement restriction means 40 has a structure by which when a card 1 passes through the slot 33 between the card guide unit 7 and the card guide 14, a lock member 36 protrudes into the slot 33 to prohibit movement of the card 1. The lock member 36 is capable of moving in the direction indicated by the arrow M by a driving unit 37 composed of an electromagnetic solenoid, a piezoelectric device or the like, such that it can take two positions, namely, a position where movement of the card 1 is prohibited (restricted position) and a position where the card 1 is allowed to pass through. The driving unit 37 is controlled by the control apparatus 12, and causes the lock member 36 to move to two positions, namely, a position where movement of the card 1 is prohibited and a position where the card 1 is allowed to pass through.

[0028]

The card movement restriction means 30 (40) is caused to function as a result of the driving unit 35 or 37 being controlled by the control apparatus 12 to prevent the fraudulent movement of the card 1. The card movement restriction means 30 (40) is provided with the object detection sensors 22 and 23 as sensors for detecting movement of the card 1, and has a function of detecting movement of the card 1 with these sensors 22 and 23 to restrict the erroneous or fraudulent movement of a card. In this regard, the card movement restriction means 30 (40) may be controlled to prevent the movement of the card 1 in at least the following situations:

[0029]

As a variation, the foregoing embodiment may be applied to an apparatus for reading shuffled playing cards on a game table. In such a case, the reading apparatus may include a card reading unit that reads, from a card, information provided in the card drawn onto a game table, and a control unit

that inspects the arrangement order of the shuffled playing cards based on the information of the card read by the card reading unit. The reading apparatus can be placed above the game table in the casino to read the cards.

Claims

1. A card shoe apparatus for storing shuffled playing cards on a game table and manually dealing the cards housed in the card shoe apparatus one by one onto the game table, the card shoe apparatus comprising:

a card housing unit for housing the shuffled playing cards;

an opening for drawing out the cards from the card housing unit one by one;

a card reading unit that reads, from a card, information provided in the card drawn from the card housing unit onto the game table;

a control unit that stores rules of a card game, and determines the winner/loser of the card game according to said rules, based on the information of the cards read by the card reading unit; and

an output unit that outputs a result of the winner/loser determined by the control unit,

wherein the control unit has a shuffling checking function of storing the information of the cards read by the card reading unit for a predetermined number of cards, detecting an irregularity in the arrangement order of the shuffled playing cards housed in the card housing unit based on the information of the cards read by the card reading unit, and outputting an irregularity alarm,

the irregularity in the arrangement order of the shuffled playing cards being at least one of the following cases:

(a) a case where a state in which the rank of a card is larger or smaller by one than the card preceding that card continues for a predetermined number of cards;

(b) a case where cards with the same rank continue for a predetermined number of cards;

(c) a case where the same sequence is repeated throughout a predetermined number of cards;

(d) a case where cards with the same suit continue for at least a predetermined number of cards;

(e) a case where the arrangement order of a predetermined number of cards matches an arrangement order registered in advance;

(f) a case where a state in which a card drawn has the same suit and rank as the card that precedes the card drawn by 52 cards continues for a plurality of cards; and

(g) a case that corresponds to a case that has been registered in advance as an irregular case.

2. The card shoe apparatus according to claim 1, wherein a wired or wireless communication means is used as a means of outputting an irregularity alarm.

3. The card shoe apparatus according to claim 1 or 2, wherein the irregularity in the arrangement order of the shuffled playing cards is a case where an irregular state continues throughout a predetermined number of cards, and as a stage prior to the occurrence of the irregularity in the arrangement order, a preliminary alarm of irregularity is given during a card that is several cards prior to the occurrence of the irregularity in the arrangement of the predetermined number of cards.

4. The card shoe apparatus according to any one of claims 1 to 3, wherein the irregularity alarm is given by a two-phase alarm system; a first phase in which an alarm is displayed in a side display of the card shoe apparatus upon the detection of an irregularity; and a second phase in which the irregularity alarm is given as a final irregularity display at the end of a game during which an irregularity occurs.

5. A table game system comprising:

shuffled playing cards made up of a predetermined number of cards, the cards having been shuffled in advance, each card with information representing a rank thereof as a code that is normally invisible; and,

a card shoe apparatus for storing the shuffled playing cards on a game table and manually dealing the cards housed in the card shoe apparatus one by one onto the game table,

wherein the card shoe apparatus includes:

a card housing unit for housing the shuffled playing cards;

an opening for drawing out the cards from the card housing unit one by one

a card reading unit that reads the code provided in the card drawn from the card housing unit onto the game table,

a control unit that stores rules of a card game, and determines

the winner/loser of the card game according to said rules, based on the information of the cards read by the card reading unit; and

a output unit that outputs a result of the winner/loser determined by the control unit, and

the control unit has a shuffling checking function of storing the information of the cards read by the card reading unit for a predetermined number of cards, detecting an irregularity in the arrangement order of the shuffled playing cards housed in the card housing unit based on the information of the cards read by the card reading unit, and outputting an irregularity alarm,

the irregularity in the arrangement order of the shuffled playing cards being at least one of the following cases:

(a) a case where a state in which the rank of a card is larger or smaller by one than the card preceding that card continues for a predetermined number of cards;

(b) a case where cards with the same rank continue for a predetermined number of cards;

(c) a case where the same sequence is repeated throughout a predetermined number of cards;

(d) a case where cards with the same suit continue for at least a predetermined number of cards;

(e) a case where the arrangement order of a predetermined number of cards matches an arrangement order registered in advance;

(f) a case where a state in which a card drawn has the same suit and rank as the card that precedes the card drawn by 52 cards continues for a plurality of cards; and

(g) a case that corresponds to a case that has been registered in advance as an irregular case.

6. The table game system according to claim 5, wherein a wired or wireless communication means is used as a means of outputting the irregularity alarm.

7. The table game system according to claim 5 or 6, wherein the irregularity alarm is given by a two-phase alarm system; a first phase in which an alarm is displayed in a side display of the card shoe apparatus upon the detection of an irregularity; and a second phase in which the irregularity alarm is

given as a final irregularity display at the end of a game during which an irregularity occurs.

8. The table game system according to any one of claims 5 to 7, wherein the irregularity in the arrangement order of the shuffled playing cards is a case where an irregular state continues throughout a predetermined number of cards, and as a stage prior to the occurrence of the irregularity in the arrangement order, a preliminary alarm of irregularity is given during a card that is several cards prior to the end of the predetermined number of cards.

9. The table game system according to any one of claims 5 to 8, wherein the irregularity alarm is given by a two-phase alarm system; a first phase in which an alarm is displayed in a side display of the card shoe apparatus upon the detection of an irregularity; and a second phase in which the irregularity alarm is given as a final irregularity display at the end of a game during which an irregularity occurs.

10. An apparatus for reading shuffled playing cards on a game table, comprising:

a card reading unit that reads, from a card, information provided in the card drawn onto the game table; and

a control unit that inspects the arrangement order of the shuffled playing cards based on the information of the card read by the card reading unit,

wherein the control unit has a shuffling checking function of storing the information of the cards read by the card reading unit for a predetermined number of cards, detecting an irregularity in the arrangement order of the shuffled playing cards housed in the card housing unit based on the information of the cards read by the card reading unit, and outputting an irregularity alarm,

the irregularity in the arrangement order of the shuffled playing cards being at least one of the following cases:

(a) a case where a state in which the rank of a card is larger or smaller by one than the card preceding that card continues for a predetermined number of cards;

(b) a case where cards with the same rank continue for a predetermined number of cards;

(c) a case where the same sequence is repeated throughout a predetermined

number of cards;
(d) a case where cards with the same suit continue for at least a predetermined number of cards ;
(e) a case where the arrangement order of a predetermined number of cards matches an arrangement order registered in advance;
(f) a case where a state in which a card drawn has the same suit and rank as the card that precedes the card drawn by 52 cards continues for a plurality of cards; and
(g) a case that corresponds to a case that has been registered in advance as an irregular case.

11. The apparatus for reading shuffled playing cards according to claim 10, wherein a wired or wireless communication means is used as a means of outputting the irregularity alarm.

12. The apparatus for reading shuffled playing cards according to claim 10 or 11, wherein the irregularity alarm is given by a two-phase alarm system; a first phase in which an alarm is displayed upon the detection of an irregularity; and a second phase in which the irregularity alarm is given as a final irregularity display at the end of a game during which an irregularity occurs.

13. The apparatus for reading shuffled playing cards according to any one of claims 10 to 12, wherein the irregularity in the arrangement order of the shuffled playing cards is a case where an irregular state continues throughout a predetermined number of cards, and as a stage prior to the occurrence of the irregularity in the arrangement order, a preliminary alarm of irregularity is given during a card that is several cards prior to the end of the predetermined number of cards.

14. The apparatus for reading shuffled playing cards according to any one of claims 1 to 4, further comprising a card entry/exit restriction means that is provided on the opening and that restricts the entry/exit of a card to/from the card housing unit,

the control unit has a function to activate the card entry/exit restriction means when the control unit detects the irregularity in the arrangement order of the shuffled playing cards.

15. The table game system according to any one of claims 5 to 9, further comprising a card entry/exit restriction means that is provided on the opening and that restricts the entry/exit of a card to/from the card housing unit,

the control unit has a function to activate the card entry/exit restriction means when the control unit detects the irregularity in the arrangement order of the shuffled playing cards.

16. The apparatus for reading shuffled playing cards according to any one of claims 1 to 4, wherein the (g) a case that corresponds to a case that has been registered in advance as an irregular case includes a case where a state in which a card drawn has the same sequence of suit and rank as at least a part of the cards that have been read preceding set of the game continues for a plurality of cards or for games.