wireless IC (RFID) tag to each chip to recognize the amount of the chip.

[0005]

In a card game monitoring system disclosed in WO 2015/107902 A, fraud monitoring is performed by determining through image analysis of movement of chips whether or not the chips placed on a gaming table are collected or redeemed in accordance with a win or lose result.

SUMMARY

[0006]

The present disclosure seeks to provide a new system for detecting fraud in a game in a casino or an error or fraud at the time of wagering chips or doing settlement.

[0006a]

According to an aspect of the present disclosure, there is provided a management system for managing a game in which one or more gaming chips containing RFID tags are bet on a gaming table, the management system comprising: a chip recognition device configured to recognize a position on the gaming table, a type, and a number of the one or more gaming chips placed in a betting area on the gaming table; a game result obtaining device configured to obtain a result of the game; and a controller configured to calculate an amount of the gaming chips to be paid for one or more gaming chips that won the game, based on the position on the gaming table, the type, and the number of the one or more gaming chips that won the game recognized using the chip recognition device, and the result of the game

obtained by the game result obtaining device, wherein the chip recognition device comprises: a first RFID reading device configured to read RFID tags of the one or more gaming chips and recognize the position on the gaming table, the type, and the number of the one or more gaming chips based on a reading result; and/or a recognition system comprising a camera configured to capture an image of the one or more gaming chips, and an image recognition device configured to recognize the position on the gaming table, the type, and the number of the one or more gaming chips on the gaming table by performing image recognition using a neural network on the image, and the controller is configured to calculate the amount of gaming chips to be paid according to a rule of the game, at a payout rate according to the position on the game table of the one or more gaming chips that won the game.

[0007]

There is also disclosed a fraud detection system in a casino having a plurality of gaming tables, including: a game recording apparatus which records a progress of a game played in the gaming table as an image; an image analyzing apparatus which performs
image analysis on the image of the recorded progress of the game; a win/lose result determining apparatus which determines a win or lose result of each game in the gaming table; and a control device which detects fraud practiced in the gaming table by using a result of the image analysis by the image analyzing apparatus and the win or lose result determined by the win/lose result determining apparatus,

determining apparatus may be a card distribution device which distributes the cards in the gaming table or a control device which determines the win or lose result of each game from information of the image analyzing apparatus reading the cards distributed in the gaming table by using a camera.

[0021]

According to the fraud detection system of the present disclosure, it is possible to detect fraud in collection and redemption of chips in accordance with a win or lose result of a game.

[0022]

In addition, according to the system of the present disclosure, although the cards are slanted by "card squeegee" frequently performed by players in a baccarat game or the like, the rank and suit of the cards can be determined by image analysis, so that the total amount of chips being overlapped or being in a blind spot together with the positions can be recognized. In addition, fraud at the time of exchanging cash and chips can be detected.

BRIEF DESCRIPTION OF DRAWINGS

[0023]

FIG. 1 is a diagram illustrating an overview of a fraud detection system in a casino having a plurality of gaming tables according to a first embodiment of the invention;

FIG. 2A is a perspective diagram of chips illustrating an example of different overlapped states of chips recognized in the first embodiment of the invention;