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]

Embodiments of the invention seek 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.

[0007]

An aspect of the present invention provides a management system of table game in casino having a plurality of gaming table, comprising:

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 control device which recognizes positions, types, and numbers of chips on the gaming table wagered by the player through the image analyzing apparatus,

wherein the control device has a function that is capable of specifying individual players placed at each playing position of the gaming table, wherein the each player is provided with identification number to be specified, the function is capable of associating the chips with the identification number of the player who bet the chips,

wherein the control device further has function that is capable of recognizing positions, types, and amount of the chips wagered by player in each game using artificial intelligence technology or machine learning technology,

recognizing total amount and history of wagered chips of each game, and recognizing amount and history of wagered chips of each player at timings when each predetermined number of games have elapsed.

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]

As disclosed, 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, as disclosed, 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;