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 games played in a casino using gaming chips at a game table with at least one betting area containing a plurality of betting targets and a chip tray, the management system comprising:

a betting management device configured to use artificial intelligence to image-recognize the gaming chips wagered in the betting area for a game or to obtain IDs of the gaming chips wagered in the betting area for a game; and

a controller configured to manage a redemption of the gaming chips from the chip tray for stacks that are wagered in the betting area for the game and are determined to have won

the game according to a game results;

a database configured to store a history of gaming chip transfers between players and the casino, wherein

the betting management device is configured to recognize that a plurality of stacks have been wagered by each of the plurality of players on the same betting target is bet by each of the plurality of players,

the controller is configured, for the purpose of managing the redemption, to recognize that a stack of gaming chips redeemed from the chip tray for each of plurality of the stacks bet on the same betting target by a plurality of players and are determined to have won the game based on the game results has become the gaming chips of each of a plurality of players who have won the game, and to update the database based on the recognition.

[0006b]

According to another aspect of the present disclosure, there is provided a management system for managing games played in a casino using gaming chips at a game table with at least one betting area containing a plurality of betting targets and a chip tray, the management system comprising:

a betting management device configured to use artificial intelligence to image-recognize an ID of a gaming chip that has been wagered on one of the plurality of betting targets for the game or to obtain the ID of the gaming chip wagered in the betting area for a game; and

a controller configured to manage a betting history of

a player based on the ID of the gaming chip obtained by the betting management device, wherein

the betting management device is configured to image-recognizes, on a player-by-player basis, the IDs of a plurality of gaming chips that have been wagered on the same betting target by a plurality of players, or to obtain the IDs of a plurality of gaming chips that have been wagered on the same betting object by a plurality of players.

[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;