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.

According to an aspect, there is provided a system in an amusement facility having a game table, comprising:

an image capturing device configured to capture an image of the game table to generate at least one video or image including at least a player playing a game on the game table and a chip bet on the game table;

a detection device configured to detect a position of the chips stacked on the game table by analyzing a video or an image generated by the image capturing device and including the chip bet on the game table using artificial intelligence or deep learning structure;

determination device configured to determine who handled the chip detected by the detection device by analyzing a video or an image generated by the image capturing device and including the chip bet on the game table and at least a hand ~~or an arm~~ of the player playing the game on the game table using

artificial intelligence or deep learning structure; and

a player identification device configured to identify a player who handles the chip by determining whose hand ~~or arm~~ handles the chip detected by the detection device,

wherein the determination device determines who took the chip or placed the chip based on a video or an image of when presence or absence of the chip as detected by the detection device changed.

[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, wherein the control device recognizes a position, type, and number of the chips wagered by each player through

Claims

1. A system in an amusement facility having a game table, comprising:

an image capturing device configured to capture an image of the game table to generate at least one video or image including at least a player playing a game on the game table and a chip bet on the game table;

a detection device configured to detect a position of the chips stacked on the game table by analyzing a video or an image generated by the image capturing device and including the chip bet on the game table using artificial intelligence or deep learning structure;

determination device configured to determine who handled the chip detected by the detection device by analyzing a video or an image generated by the image capturing device and including the chip bet on the game table and at least a hand ~~or an arm~~ of the player playing the game on the game table using artificial intelligence or deep learning structure; and

a player identification device configured to identify a player who handles the chip by determining whose hand ~~or arm~~ handles the chip detected by the detection device,

wherein the determination device determines who took the chip or placed the chip based on a video or an image of

when presence or absence of the chip as detected by the detection device changed.

2. The system according to claim 1, further comprising an identifying device configured to output at least one of a video or an image including a player playing a game at the game table, or information on a playing position of a player playing a game at the game table.

3. The system according to claim 2, wherein the player identifying device identifies the playing position without identifying an individual player.

4. The system according to claim 1, wherein the player identifying device identifies an ID of the player by analyzing a video or an image including a face of the player playing the game at the game table generated by the image capturing device using artificial intelligence or deep learning structure.

5. The system according to claim 1, wherein the image capturing device includes at least a first camera that generates a video or an image including a hand ~~or an arm~~ of a player playing a game on the game table, and at least a

second camera that generates a video or an image including chips bet on the game table.

6. The system according to claim 1, further comprising a controller configured to keep track of a total bet amount and/or a bet history of the chip by a player at predetermined points in time according to a progress of the games on the game table.

7. The system according to claim 1, further comprising a recognition device configured to recognize a type and a number of the chips stacked on the game table by analyzing a video or an image generated by the image capturing device and including the chip bet on the game table using artificial intelligence or deep learning structure.

8. The system according to claim 1, further comprising:

a game result determination device configured to determine a result of the game; and

a controller configured to determine whether the chips stacked on the game table are winning chips or losing chips based on the result of the game determined by the game result determination device and the positions of the chips stacked on the game table recognized by the recognition device.