amount of wagered chips, proposed is a technique of attaching an 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]

An aspect of the present invention provides a table game management system comprising:

a gaming table that includes a plurality of betting areas that are adjacent each other and that include, for each of a plurality of player positions, a respective player area and a respective banker area;

at least one detector, wherein the at least one detector is configured to:

identify, for each of the betting areas respectively, respective information, including types and numbers, of respective gaming chips placed in the respective betting area for placement of a bet in a game; and

detect contents of gaming chips of a dealer; and

at least one processor, wherein the at least one processor is configured to:

determine a result of the game;

determine, for each of a collection and a payment, an expected change to the gaming chips of the dealer based on (1) the determined result of the game and (2) the identified respective information of the gaming chips;

based on the expected change and based on contents of the gaming chips of the dealer as detected by the at least one detector prior to a settlement, determine, for each of the collection and the payment, modified contents of the gaming chips of the dealer that should be present after the settlement; and

determine, for each of the collection and the payment, whether a collection or a payment is correctly performed by comparing the determined modified contents and actual contents detected by the at least one detector after the settlement.

[0006b]

Another aspect of the present invention provides a table game management system for use with a gaming table that includes a plurality of betting areas that are adjacent each other and that include, for each of a plurality of player positions, a respective player area and a respective banker area, the table game management system comprising:

at least one detector, wherein the at least one detector is configured to:

identify, for each of the betting areas respectively, respective information, including types and numbers, of respective gaming chips placed in the respective betting area

for placement of a bet in a game; and

detect contents of gaming chips of a dealer; and

at least one processor, wherein the at least one processor is configured to:

determine a result of the game;

determine, for each of a collection and a payment, an expected change to the gaming chips of the dealer based on (1) the determined result of the game and (2) the identified respective information of the gaming chips;

based on the expected change and based on contents of the gaming chips of the dealer as detected by the at least one detector prior to a settlement, determine, for each of the collection and the payment, modified contents of the gaming chips of the dealer that should be present after the settlement; and

determine, for each of the collection and the payment, whether a collection or a payment is correctly performed by comparing the determined modified contents and actual contents detected by the at least one detector after the settlement.

[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

CLAIMS

1. A table game management system comprising:

a gaming table that includes a plurality of betting areas that are adjacent each other and that include, for each of a plurality of player positions, a respective player area and a respective banker area;

at least one detector, wherein the at least one detector is configured to:

identify, for each of the betting areas respectively, respective information, including types and numbers, of respective gaming chips placed in the respective betting area for placement of a bet in a game; and

detect contents of gaming chips of a dealer; and

at least one processor, wherein the at least one processor is configured to:

determine a result of the game;

determine, for each of a collection and a payment, an expected change to the gaming chips of the dealer based on (1) the determined result of the game and (2) the identified respective information of the gaming chips;

based on the expected change and based on contents of the gaming chips of the dealer as detected by the at least one detector prior to a settlement, determine, for each of the collection and the payment, modified contents of the gaming chips of the dealer that should be present after the settlement; and

determine, for each of the collection and the payment, whether a collection or a payment is correctly performed by comparing the determined

modified contents and actual contents detected by the at least one detector after the settlement.

2. The table game management system according to claim 1, wherein the plurality of betting areas further include side betting areas that are different from the player areas and the banker areas.

3. The table game management system according to claim 1, wherein the betting areas of different ones of the player positions are adjacent each other.

4. The table game management system according to claim 1, wherein:

the gaming table includes, separate from the plurality of betting areas, a tie betting area that includes a plurality of adjacent sub-areas that each corresponds to a respective one of the player positions; and

the at least one detector is configured to identify the types and numbers of respective gaming chips additionally respectively for each of the sub-areas of the tie betting area.

5. The table game management system according to claim 1, wherein the betting areas are demarcated by lines.

6. The table game management system according to claim 1, wherein the plurality of betting areas are arranged such that a respective plurality of stacks of the gaming chips can be placed in each of the plurality of betting areas.

7. The table game management system according to claim 6, wherein the at least one detector is configured to perform

the identification of the types and numbers while the gaming chips are arranged in the stacks.

8. The table game management system according to claim 1, wherein the at least one detector is configured to perform the identification of the types and numbers using a generated image capturing the gaming chips on the gaming table.

9. The table game management system according to claim 1, wherein the at least one detector is configured to perform the identification of the types and numbers based on identifications (IDs) embedded in the gaming chips.

10. The table game management system according to claim 1, wherein the settlement is a collection settlement or a payment settlement.

11. The table game management system according to claim 1, wherein the contents of the gaming chips of the dealer include an amount of the gaming chips of the dealer.

12. A table game management system for use with a gaming table that includes a plurality of betting areas that are adjacent each other and that include, for each of a plurality of player positions, a respective player area and a respective banker area, the table game management system comprising:

at least one detector, wherein the at least one detector is configured to:

identify, for each of the betting areas respectively, respective information, including types and numbers, of respective gaming chips placed in the

respective betting area for placement of a bet in a game; and

detect contents of gaming chips of a dealer; and

at least one processor, wherein the at least one processor is configured to:

determine a result of the game;

determine, for each of a collection and a payment, an expected change to the gaming chips of the dealer based on (1) the determined result of the game and (2) the identified respective information of the gaming chips;

based on the expected change and based on contents of the gaming chips of the dealer as detected by the at least one detector prior to a settlement, determine, for each of the collection and the payment, modified contents of the gaming chips of the dealer that should be present after the settlement; and

determine, for each of the collection and the payment, whether a collection or a payment is correctly performed by comparing the determined modified contents and actual contents detected by the at least one detector after the settlement.

13. The table game management system according to claim 12, wherein the plurality of betting areas for which the at least one detector is configured to identify the respective information on the basis of which the processor is configured to determine the expected change further include side betting areas that are different from the player areas and the banker areas.

14. The table game management system according to claim 12, wherein the betting areas of different ones of the player positions are adjacent each other.

15. The table game management system according to claim 12, wherein the at least one detector is configured to identify the types and numbers of respective gaming chips additionally respectively for each respective sub-area of a respective plurality of adjacent sub-areas of a tie betting area, each of the sub-areas corresponding to a respective one of the player positions.

16. The table game management system according to claim 12, wherein the betting areas, for which the at least one detector is configured to perform its detection, are demarcated by lines.

17. The table game management system according to claim 12, wherein the plurality of betting areas are arranged such that a respective plurality of stacks of the gaming chips can be placed in each of the plurality of betting areas.

18. The table game management system according to claim 12, wherein the at least one detector is configured to perform the identification of the types and numbers while the gaming chips are arranged in respective pluralities of stacks of the gaming chips placed in respective ones of the plurality of betting areas.

19. The table game management system according to claim 12, wherein the at least one detector is configured to perform the identification of the types and numbers using a

generated image capturing the gaming chips on the gaming table.

20. The table game management system according to claim 12, wherein the at least one detector is configured to perform the identification of the types and numbers based on IDs embedded in the gaming chips.

21. The table game management system according to claim 10, wherein the settlement is a collection settlement or a payment settlement.

22. The table game management system according to claim 12, wherein the contents of the gaming chips of the dealer include an amount of the gaming chips of the dealer.