or that it is a counterfeit gaming chip that does not have an RFID tag.

[0006]

The RFID reader can read the RFID tags of multiple RFID-equipped gaming chips (e.g., multiple RFID gaming chips stored in the dealer chip tray of a game table) simultaneously. Therefore, RFID has the advantage that multiple gaming chips can be inspected simultaneously at once, without the need to inspect each gaming chip one by one. On the other hand, it is difficult for the RFID reader to read multiple nearby RFID-equipped gaming chips individually.

[0007]

If the RFID tags of a large number of gaming chips are read at the same time, even though it is possible to find that there is a gaming chip with a problem in its RFID tag (i.e., the RFID tag is faulty, the RFID tag is missing, the information stored in the RFID tag is incorrect, etc.), it is difficult to determine which specific gaming chip has such a problem. In order to identify a gaming chip with a problem from a large number of gaming chips, for example, it is necessary to read the RFID tags of gaming chips one by one with an inspection device, which is a very time-consuming process.

[0008]

In addition, there is a case in which, an RFID tag can be read normally when the inspection device reads the gaming chips one by one, but the RFID tag is not read properly when the reading is done on the table or in a chip tray where the gaming chips are actually used. In this case, even if the inspection device inspects the gaming chips one by one, it will not be able to identify the gaming chips with such a problem. Furthermore, if the RFID tag is faulty, or if there is no RFID tag, it may not even be possible to ascertain the existence of such a gaming chip.

[0009]

The present disclosure provides a management system that can identify a gaming chip with problem in RFID tag.

[0010]

A management system of an embodiment comprises: an image capturing device configured to capture a plurality of gaming chips,

each gaming chip having a built-in RFID tag storing first information and having second information written on a surface thereof to generate an image; a reading device configured to read the RFID tags of the plurality of gaming chips to obtain the first information of the plurality of gaming chips; an image analysis device configured to obtain a location of each of the plurality of gaming chips and the second information, based on the image; and a control device configured to identify a location of a problem gaming chip whose RFID tag is fraudulent, damaged, or possibility thereof, or whose notation is fraudulent or possibly fraudulent, by comparing the first information of the plurality of gaming chips obtained by the reading device with the second information of each of the plurality of gaming chips obtained by the image analysis device, wherein the control device is configured to indicate, based on the obtained second information, a value and identification information of each of the plurality of gaming chips that have been recognized, at a respective position in the image corresponding to each of the plurality of gaming chips.

[0010a]

A management system of another embodiment comprises an image capturing device configured to capture a plurality of gaming chips, each gaming chip having a built-in RFID tag storing first information and having second information written on a surface thereof to generate an image; a reading device configured to read the RFID tags of the plurality of gaming chips to obtain the first information of the plurality of gaming chips; an image analysis device configured to obtain a location of each of the plurality of gaming chips and the second information, based on the image; and a control device configured to identify a location of a problem gaming chip whose RFID tag is fraudulent, damaged, or possibility thereof, or whose notation is fraudulent or possibly fraudulent, by comparing the first information of the plurality of gaming chips obtained by the reading device with the second information of each of the plurality of gaming chips obtained by the image analysis device, wherein the problem gaming chip includes a gaming chip whose RFID tag cannot be read reliably.

[0011]

In the management system described above, the control device may be configured to identify the location of the gaming chips having the second information not corresponding to the first information as the problem gaming chips.

[0012]

In the management system described above, the control device may be configured to identify the location of the gaming chip having the second information, for which the corresponding first information is not obtained, as the problem gaming chip.

[0013]

In the management system described above, the control device may be configured to identify the location of the gaming chip having the RFID tag in which the first information not corresponding to the second information is stored as the problem gaming chip.

[0014]

In the management system described above, the control device may be configured to identify the location of the gaming chip having the RFID tag in which the first information for which the corresponding second information is not obtained is stored as the problem gaming chip.

[0015]

In the management system described above, the control device

CLAIMS:

1. A management system comprising:

an image capturing device configured to capture a plurality of gaming chips, each gaming chip having a built-in RFID tag storing first information and having second information written on a surface thereof to generate an image;

a reading device configured to read the RFID tags of the plurality of gaming chips to obtain the first information of the plurality of gaming chips;

an image analysis device configured to obtain a location of each of the plurality of gaming chips and the second information, based on the image; and

a control device configured to identify a location of a problem gaming chip whose RFID tag is fraudulent, damaged, or possibility thereof, or whose notation is fraudulent or possibly fraudulent, by comparing the first information of the plurality of gaming chips obtained by the reading device with the second information of each of the plurality of gaming chips obtained by the image analysis device,

wherein the control device is configured to indicate, based on the obtained second information, a value and identification information of each of the plurality of gaming chips that have been recognized, at a respective position in the image corresponding to each of the plurality of gaming chips.

2. A management system comprising:

an image capturing device configured to capture a plurality of gaming chips, each gaming chip having a built-in RFID tag storing first information and having second information written on a surface thereof to generate an image;

a reading device configured to read the RFID tags of the plurality of gaming chips to obtain the first information of the plurality of gaming chips;

an image analysis device configured to obtain a location of each of the plurality of gaming chips and the second information,

based on the image; and

a control device configured to identify a location of a problem gaming chip whose RFID tag is fraudulent, damaged, or possibility thereof, or whose notation is fraudulent or possibly fraudulent, by comparing the first information of the plurality of gaming chips obtained by the reading device with the second information of each of the plurality of gaming chips obtained by the image analysis device,

wherein the problem gaming chip includes a gaming chip whose RFID tag cannot be read reliably.

3. The management system according to claim 1 or 2, wherein the control device is configured to identify the location of the gaming chips having the second information not corresponding to the first information as the problem gaming chips.

4. The management system according to claim 1 or 2, wherein the control device is configured to identify the location of the gaming chip having the second information, for which the corresponding first information is not obtained, as the problem gaming chip.

5. The management system according to claim 1 or 2, wherein the control device is configured to identify the location of the gaming chip having the RFID tag in which the first information not corresponding to the second information is stored as the problem gaming chip.

6. The management system according to claim 1 or 2, wherein the control device is configured to identify the location of the gaming chip having the RFID tag in which the first information for which the corresponding second information is not obtained is stored as the problem gaming chip.

7. The management system according to claim 1 or 2, wherein the control device is configured to use information other than the first information and the second information of the problem gaming chip to

determine whether the problem is in the RFID tag or the notation.

8. The management system according to claim 7, wherein

the gaming chip has an appearance that enables identification of a type of the gaming chip,

the image analysis device is configured to determine the type of each of the plurality of gaming chips based on the image, and

the control device is configured to determine which of the RFID tag and the notation is wrong based on the type determined by the image analysis device.

9. The management system according to claim 1 or 2, wherein

the gaming chip has an appearance that enables identification of a type of the gaming chip,

the second information is unique for each of the types,

the image analysis device is configured to obtain the second information and determine the type for each of the plurality of gaming chips based on the image, and

the control device is configured to compare the first information with a combination of the second information and information of the type.

10. The management system according to claim 1 or 2, wherein

the gaming chip has an appearance that enables identification of a type of the gaming chip,

the image analysis device is configured to, for each of the plurality of gaming chips, obtain the second information and determine the type, based on the image, and

the control device is configured to, in the case where the second information cannot be read, or in the case where it is determined that there is the problem gaming chip, identify the second information using the information of the type determined by the image analysis device and compare the identified second information with the first information.

11. The management system according to any of claims 8 to 10,

wherein the gaming chip has an appearance on a side thereof that can identify the type of the gaming chip.

12. The management system according to claim 1 or 2, further comprising a housing unit configured to accommodate the plurality of gaming chips, wherein

the imaging capturing device is configured to capture the plurality of gaming chips accommodated in the housing unit.

13. The management system according to claim 12, wherein the housing unit is configured to accommodate the plurality of gaming chips in an aligned manner.

14. The management system according to claim 12, wherein the housing unit is a chip tray provided on a game table.

15. The management system according to claim 14, wherein the image capturing device is fixed to the game table.

16. The management system according to claim 1 or 2, wherein the second information is written on the side of the gaming chip.

17. The management system according to claim 1 or 2, wherein

the second information is information represented by a matrix pattern, a dot pattern, a barcode, a sequence of numbers, or a sequence of letters, and

the image analysis device is configured to obtain the second information by decoding the matrix pattern, the dot pattern, or the barcode, or by recognizing the sequence of numbers or the sequence of letters.

18. The management system according to claim 1 or 2, wherein the first information is a unique ID that uniquely identifies the gaming chip.

19. The management system according to claim 18, wherein the second

information is the same unique ID as the first information.

20. The management system according to claim 1 or 2, wherein

the first information and the second information are different information from each other,

the management system further comprises a database that records a combination of the first information and the second information for each gaming chip, and

the control device is configured to perform the comparison by referring to the database.

21. The management system according to claim 1 or 2, wherein

the second information is duplicated in some of the plurality of gaming chips, and

the control device is configured to, when a plurality of identical second information is obtained, and the number of the identical second information is greater than the number of first information corresponding to the identical second information, determine the plurality of the gaming chips on which the identical second information are represented as the problem gaming chips and identify each of the locations of the plurality of problem gaming chips.

22. The management system according to claim 1 or 2, wherein

the second information is duplicated in some of the plurality of gaming chips, and

the control device is configured to, when a plurality of identical second information is obtained, and the number of the identical second information is greater than the number of first information corresponding to the identical second information, determine the plurality of the gaming chips on which the identical second information are represented as the problem gaming chips and identify an area of the plurality of problem gaming chips.

23. The management system according to claim 1 or 2, wherein

the second information is duplicated in some of the plurality

of gaming chips, and

the control device is configured to, when there is a plurality of candidates for the first information for which the corresponding second information is not obtained, identify the plurality of candidates for the first information.

24. The management system according to claim 1 or 2, further comprising a display device configured to indicate the location of the problem gaming chip.

25. The management system according to claim 24, wherein the display device is configured to superimpose the location on the image.

26. The management system according to claim 24, wherein

the management system further comprises a housing unit capable of accommodating the plurality of gaming chips in a predetermined accommodating position,

the image capturing device is configured to capture the plurality of gaming chips accommodated in the housing unit, and

the display device is configured to display an address of the accommodating position of the problem gaming chip in the housing unit.

27. The management system according to claim 1 or 2, further comprising:

a housing unit capable of accommodating the plurality of gaming chips in an aligned manner; and

a light irradiation device configured to irradiate light to a designated gaming chip among the plurality of gaming chips accommodated in the housing unit, wherein

the image capturing device is configured to capture the plurality of gaming chips accommodated in the housing unit, and

the control device is configured to control the light irradiation device to irradiate light on the problem gaming chip for which the location has been identified.

28. A management system comprising:

an image capturing device configured to capture a plurality of gaming chips having a built-in RFID tag storing first information and having second information written on surface thereon to generate an image;

a reading device configured to read the RFID tags of the plurality of gaming chips to obtain the first information of the plurality of gaming chips;

an image analysis device configured to obtain a location of each of the plurality of gaming chips and the second information based on the image; and

a control device configured to, when there is a specific first information in the first information of the plurality of gaming chips obtained by the reading device, identify a location of the second information corresponding to the specific first information.