MANAGEMENT SYSTEM FOR SUBSTITUTE CURRENCY FOR GAMING

Cross-reference of related applications

[0001]

This application claims the benefit of Patent Application No. 2018-182857 filed in Japan on September 6, 2018, the contents of which application are hereby incorporated by reference.

Technical field

[0002]

The present invention relates to substitute currency for gaming for use in casinos and other gaming facilities that use substitute currency for gaming, and to a system for managing substitute currency for gaming.

[0003]

Among the many live table games played in casinos and gaming facilities are baccarat and blackjack. In casinos and gaming facilities, substitute currency for gaming is used for those games. In casinos and gaming facilities, game substitutes are exchanged for cash at designated exchange counters in casinos and gaming facilities, or at the game tables by exchange staff or dealers in charge of the game tables.

[0004]

The use of counterfeit substitute currency for gaming should not occur in casinos. In order to prevent the use of counterfeit substitute currency for gaming in casinos, the management system for substitute currency for gaming described in International Application Publication No. WO2017/135103 registers the IDs of substitute currency for gaming to be used in a database in advance. If there is a situation where there is a new ID that did not exist in the database, or two or more identical IDs exist, the system determines the possibility of counterfeit.

Summary

[0005]

Embodiments of the present invention provide a management system or

substitute currency for gaming used in casinos and gaming facilities to prevent the use of counterfeit substitute currency for gaming. Embodiments of the present invention seek to prevent the use of counterfeit or fraudulent exchange of substitute currency for gaming in casinos and gaming facilities. In the conventional technology, it is possible to determine that at least one of the substitute currency for gaming is a fake when two or more substitute currency for gaming with the same ID are found by registering the individually identifiable unique ID attached to the substitute currency for gaming in a database in advance. However, it is not possible to directly distinguish between genuine and fake substitute currency for gaming. Therefore, if only counterfeit substitute currency for gaming is used and genuine substitute currency for gaming is not used, it cannot be determined that it is a counterfeit, and the conventional technology cannot be a direct solution to prevent the use of counterfeit substitute currency for gaming.

[0005a]

An aspect of the present invention provides a management system for a plurality of substitute currency for gaming, wherein

each of the plurality of the substitute currency for gaming has an appearance consisting of a pattern that is determined by chance in a manufacturing process, and a unique ID that can be individually identified is assigned to each of the plurality of the substitute currency for gaming,

the management system comprises:

a database that, for a plurality of the substitute currency for gaming that is registered, associates the appearance of the substitute currency for gaming and the ID of the substitute currency for gaming and stores them;

an image acquisition device configured to acquire an image by capturing the appearance of the substitute currency for gaming;

an ID reading device that reads the ID of the substitute currency for gaming;

a pattern recognizing device that recognizes the pattern from the image acquired by the image acquisition device using a deep learning structure; and

a management control device that determines whether an

appearance associated in the database with the ID read by the ID reading device corresponds to the pattern that is recognized by the pattern recognizing device, thereby to determine authenticity of the substitute currency for gaming.

[0005b]

Another aspect of the present invention provides a management system for a plurality of substitute currency for gaming, wherein

each of the plurality of the substitute currency for gaming consists of a pattern that is determined by chance in a manufacturing process,

the management system comprises:

an image acquisition device configured to acquire an image by capturing the appearance of the substitute currency for gaming;

a management control device that uses an artificially intelligent device having a deep learning structure to identify which of a plurality of registered substitute currency for gaming the substitute currency for gaming in the image correspond to, wherein the deep learning structure inputs the image and outputs information, for respective appearance of the plurality of registered substitute currency for gaming, indicating whether or not it corresponds to the image.

[0006]

According to the disclosure, the management system of the substitute currency for gaming is as follows:

the substitute currency for gaming has a ground pattern formed in the manufacturing process or material production process, and a unique ID that can be individually identified,

the ground patterns have a pattern that is difficult to distinguish from each other at first glance, but is not completely identical,

the substitute currency for gaming further has a multi-layered structure consisting of multiple layers of plastic including:

a layer with the ground pattern;

an indication plastic layer on which an indication of

an amount of money, etc., of the substitute currency for gaming is printed,

the layer with the ground pattern is located inside of the indication plastic layer, and the ground pattern can be visually recognized through the indication plastic layer,

the management system comprises:

Claims:

1. A management system for a plurality of substitute currency for gaming, wherein

each of the plurality of the substitute currency for gaming has an appearance consisting of a pattern that is determined by chance in a manufacturing process, and a unique ID that can be individually identified is assigned to each of the plurality of the substitute currency for gaming,

the management system comprises:

a database that, for a plurality of the substitute currency for gaming that is registered, associates the appearance of the substitute currency for gaming and the ID of the substitute currency for gaming and stores them;

an image acquisition device configured to acquire an image by capturing the appearance of the substitute currency for gaming;

an ID reading device that reads the ID of the substitute currency for gaming;

a pattern recognizing device that recognizes the pattern from the image acquired by the image acquisition device using a deep learning structure; and

a management control device that determines whether an appearance associated in the database with the ID read by the ID reading device corresponds to the pattern that is recognized by the pattern recognizing device, thereby to determine authenticity of the substitute currency for gaming.

2. The management system according to claim 1, wherein

the substitute currency for gaming is provided with an RFID that stores the ID assigned to the substitute currency for gaming,

the ID reading device is a RFID reader configured to read the RFID.

3. The management system according to claim 1, wherein

the pattern that is determined by chance in the manufacturing process is given due at least in part to the manufacturing process or material of the substitute currency for gaming.

4. The management system according to claim 1, wherein

the pattern that is determined by chance in the manufacturing process is a lace pattern.

5. The management system according to claim 1, wherein

the pattern that is determined by chance in the manufacturing process is given due to printing.

6. The management system according to claim 1, wherein

the pattern that is determined by chance in the manufacturing process is a ground pattern.

7. The management system according to claim 6, wherein

the substitute currency for gaming has a multi-layered structure consisting of a plurality of layers that are laminated to each other and includes a layer having the ground pattern and an indication plastic layer on which an indication indicating denomination or the like of the substitute currency for gaming,

the layer having the ground pattern is arranged inside the indication plastic layer, and the ground pattern is visible through the indication plastic layer.

8. A management system for a plurality of substitute currency for gaming, wherein

each of the plurality of the substitute currency for gaming consists of a pattern that is determined by chance in a manufacturing process,

the management system comprises:

an image acquisition device configured to acquire an image by capturing the appearance of the substitute currency for gaming;

a management control device that uses an artificially intelligent device having a deep learning structure to identify which of a plurality of registered substitute currency for gaming the substitute currency for gaming in the image correspond to, wherein the deep learning structure inputs the image and outputs information, for respective appearance of the plurality of registered substitute currency for gaming, indicating whether or not it corresponds to the image.