SYSTEM, CHIP TRAY AND METHOD

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims priority to US Provisional Application No. 62/743,451 filed October 9, 2018, which is incorporated herein by reference.

FIELD

[0002] The present disclosure relates to a new system having a gaming chip storage row for storing gaming chips, a chip tray and a method.

BACKGROUND

[0003] A chip tray can be used to store gaming chips for a dealer of a wagering game. The chip tray can store different denominations of gaming chips in a safe place. Chip trays can be made from various materials including plastic and metal.

[0004] During the last 2 decades, the casino industry has been using the RFID technology to protect and track their currency products also called plaques and chips which are token that have a face value to allow gambling, payouts. The RFID tags provide a unique identifier to each item and also typically include a ROM memory to store the specific information of the currency product. The chips are stored in some trays at the gaming tables. For big gambling games such as Baccarat, the Casino use dual level chip trays. Using RFID in the tags gives the possibility for the Casino to have live inventory of these floats. The opening systems of these dual level floats is generally based on 2 handles and no assistance making it difficult to open when the float has many chips (up to 2000).

SUMMARY

[0005] The present disclosure aims at providing a system changing an amount of storage for various kinds of gaming chips, a chip tray and a method.

[0005a] According to an aspect of the present invention, there is provided a dual-chip tray system for use at a gaming table, the dual-chip tray system comprising: a lower tray configured to store a first set of one or more gaming chips that each have a built-in radio-frequency identification (RFID) tag; an upper tray configured to be stacked on the lower tray and store a second set of one or more gaming chips that each have a built-in RFID tag; and one or more RFID readers configured to read, using at least one RFID

antenna, one or more RFID tags of the first set of one or more gaming chips stored in the lower tray and one or more RFID tags of the second set of one or more gaming chips stored in the upper tray.

[0006] ~~An aspect of t~~The present disclosure ~~is~~ also provides a system including a first chip tube component comprising at least one first gaming chip storage row corresponding to a first size of gaming chip; and a second chip tube component comprising at least one second gaming chip storage row

corresponding to a second size of gaming chip, wherein a first edge of the first chip tube component is coupled to a second edge of the second chip tube component.

[0007] ~~An aspect of t~~The present disclosure ~~is~~ also provides a chip tray comprising: a first chip tube component comprising at least one first gaming chip storage row corresponding to a first size of gaming chip; and a second chip tube component comprising at least one second gaming chip storage row corresponding to a second size of gaming chip, wherein a first edge of the first chip tube component is coupled to a second edge of the second chip tube component.

[0008] ~~An aspect of t~~The present disclosure ~~is~~ also provides a method comprising, coupling a first chip tube component to a second chip tube component; coupling a third chip tube component to the second chip tube component to form a plurality of coupled chip components; and positioning the plurality of coupled chip components in an enclosure.

[0009] With 2 handles, the opening is not synchronized. Embodiments of ~~T~~the invention consists in installing a mechanism to help the upper tray open in a guided way and assist the opening of the tray without creating a risk of maintenance issues.

[0010] The mechanism is based on 3 principles:

- A single bar that links the left and the right of a tray to open. The important part is to have a system linking the left side to the right side to have a guided opening
- A lever system to reduce the efforts when opening
- A spring linked to the lever system to help the beginning of the movement when opening and closing the tray.

[0011] Such a system gives the possibility to open the tray with one hand while the second hand picks a chip from the bottom tray. This feature saves time to the Dealer while keeping the high denomination chips in a protected area in the bottom tray.

[0012] Embodiments of ~~T~~the invention can also give the possibility to have several compartments in the tray and therefore to open only parts of the upper tray. This way, the access to some compartments can also be blocked by access control devices.

CLAIMS

1. A system comprising:

a first chip tube component comprising at least one first gaming chip storage row corresponding to a first size of gaming chip; and

a second chip tube component comprising at least one second gaming chip storage row corresponding to a second size of gaming chip, wherein a first edge of the first chip tube component is coupled to a second edge of the second chip tube component.

2. The system according to claim 1, further an RFID antenna positioned to read a plurality of gaming chips positioned in the at least one first gaming chip storage row and the at least one second gaming chip storage row.

3. The system according to claim 2, wherein the first chip tube component comprises a first RFID tag and the second chip tube comprises a second RFID tag.

4. The system according to claim 3, further comprising at least one computing device configured to at least:

read the first RFID tag and the second RFID tag via the RFID antenna; and

determine a configuration of denominations of gaming chips available at a gaming table based at least in part on the first RFID tag and the second RFID tag.

5. The system according to claim 1, wherein the number of the first gaming chip storage row provided in the first chip tube component is one.

6. The system according to claim 5, wherein the first gaming chip storage row is configured to store circular gaming chips.

7. The system according to claim 5, wherein the first gaming chip storage row is configured to store rectangular gaming chips.

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

an upper tray which can store the first chip tube component and the second chip tube component; and

a lower tray which can store the first chip tube component and the second chip tube component,

wherein the upper tray is lapped over the lower tray, thereby constructing a dual chip tray.

9. The system according to claim 8, wherein the upper tray comprises a first RFID antenna for reading an RFID tag in the gaming chips which are stored in the first chip tube component and the second chip tube component stored in the upper tray, and

wherein the lower tray comprises a second RFID antenna for reading an RFID tag in the gaming chips which are stored in the first chip tube component and the second chip tube component stored in the lower tray.

10. The system according to claim 9, wherein the first RFID antenna comprises a shielding member and/or a jamming antenna adapted not to read the RFID tag in the gaming chips which are stored in the first chip tube component and the second chip tube component stored in the lower tray, and/or the second RFID antenna comprises a shielding member and/or a jamming antenna adapted not to read the RFID tag in the gaming chips which are stored in the first chip tube component and the second chip tube component stored in the upper tray.

11. The system according to claim 1, further comprising a third chip tube component having a third gaming chip storage row for storing the gaming chips which are collected from a player.

12. The system according to claim 11, wherein the third gaming chip storage row has a slit, and

wherein the system further comprises:

a camera which shoots a side surface of the gaming chip exposed from the slit; and

~~at least one computing device configured to determine, on the basis of a shooting image of the camera, the denomination of the gaming chips which are stored in the third gaming chip storage row.~~

~~13. The system according to claim 11, further comprising a third RFID antenna which reads the RFID tag in the gaming chips which are stored in the third chip component.~~

~~14. The system according to claim 11, wherein the third gaming chip storage row has a slit, and~~

~~wherein the system further comprises:~~

~~a camera which shoots a side surface of the gaming chip exposed from the slit;~~

~~a third RFID antenna which reads the RFID tag of the gaming chips which are stored in the third chip component; and~~

~~at least one computing device configured to compare the denomination of the gaming chips which are stored in the third gaming chip storage row acquired on the basis of the shooting image of the camera, with the denomination of the gaming chips which are stored in the third gaming chip storage row read by the third RFID antenna.~~

~~15. A chip tray comprising:~~

~~a first chip tube component comprising at least one first gaming chip storage row corresponding to a first size of gaming chip; and~~

~~a second chip tube component comprising at least one second gaming chip storage row corresponding to a second size of gaming chip, wherein a first edge of the first chip tube component is coupled to a second edge of the second chip tube component.~~

~~18. The chip tray of claim 15, further comprising an enclosure with a lockable lid, wherein the first chip tube component and the second chip tube component are positioned within the enclosure.~~

~~17. The chip tray of claim 15, wherein the first chip tube component and the~~

second chip tube component are injected molded.

18. The chip tray of claim 15, wherein a color of the first chip tube component is based at least in part on a denomination corresponding to gaming chips to be stored in the at least one first gaming chip storage row.

19. The chip tray of claim 15, wherein a color of the first chip tube component is selected based at least in part on a denomination corresponding to gaming chips to be stored in the at least one first gaming chip storage row.

20. The chip tray of claim 19, wherein the color of the first chip tube component is selected improve image recognition of gaming chips of the denomination based at least in part on the color of the first chip tube component contrasting with at least one color associated with the denomination.

21. The chip tray of claim 15, wherein the first chip tube component comprises an infrared sensitive pigment.

22. A method comprising,

coupling a first chip tube component to a second chip tube component;

coupling a third chip tube component to the second chip tube component to form a plurality of coupled chip components; and

positioning the plurality of coupled chip components in an enclosure.

23. The method of claim 22, further comprising:

locking a lid of the enclosure;

transporting the enclosure with the plurality of coupled chip components and a plurality of gaming chips to a gaming table;

inserting the enclosure into a receptacle in a gaming table; and

unlocking the lid of the enclosure.

24. The method of claim 22, further comprising exchanging the enclosure with a

~~second enclosure, wherein the second enclosure comprising a plurality of chip tube components and a size of gaming chip storage rows in one at least one of the plurality of chip tube components differs from a size of gaming chip storage rows in the enclosure.~~

1. A dual-chip tray system for use at a gaming table, the dual-chip tray system comprising:

a lower tray configured to store a first set of one or more gaming chips that each have a built-in radio-frequency identification (RFID) tag;

an upper tray configured to be stacked on the lower tray and store a second set of one or more gaming chips that each have a built-in RFID tag; and

one or more RFID readers configured to read, using at least one RFID antenna, one or more RFID tags of the first set of one or more gaming chips stored in the lower tray and one or more RFID tags of the second set of one or more gaming chips stored in the upper tray.

2. The dual-chip tray system according to claim 1, wherein the one or more RFID readers are configured to read the one or more RFID tags of the first set of one or more gaming chips to determine the first set of one or more gaming chips stored in the lower tray.

3. The dual-chip tray system according to claim 2, wherein the one or more RFID readers are configured to read the one or more RFID tags of the second set of one or more gaming chips to determine the second set of one or more gaming chips stored in the upper tray.

4. The dual-chip tray system according to claim 1, wherein the lower tray and the upper tray are configured to store a plurality of gaming chips including the first set of one or more gaming chips and the second set of one or more gaming chips.

5. The dual-chip tray system according to claim 1, wherein, when the upper tray is stacked on the lower tray, the upper tray and the lower tray form a cavity in which the first set of one or more gaming chips is housed.

6. The dual-chip tray system according to claim 5, wherein the one or more RFID readers is configured to read, when the upper tray is stacked on the lower tray, the one or more RFID tags of the first set of one or more gaming chips stored in the lower tray and the one or more RFID tags of the second set of one or more gaming chips stored in the upper tray.

7. The dual-chip tray system according to claim 1, wherein, when the upper tray is displaced from the lower tray, the first set of one or more gaming chips stored at the lower tray are removable from the lower tray.

8. The dual-chip tray system according to claim 7, wherein the one or more RFID readers is configured to read, when the upper tray is displaced from the lower tray, at least a portion of a plurality of gaming chips, the plurality of gaming chips including the first set of one or more gaming chips and the second set of one or more gaming chips.

9. The dual-chip tray system according to claim 1, wherein the at least one RFID antenna is a single RFID antenna.

10. The dual-chip tray system according to claim 9, further comprising the single RFID antenna.

11. The dual-chip tray system according to claim 9, wherein the single RFID antenna is included in the lower tray.

12. The dual-chip tray system according to claim 9, wherein the single RFID antenna is included in the upper tray.

13. The dual-chip tray system according to claim 1, wherein the at least one RFID antenna include a first antenna and a second antenna.

14. The dual-chip tray system according to claim 13, wherein the one or more RFID readers are configured to use:

the first antenna to read the one or more RFID tags of the second set of one or more gaming chips stored in the upper tray; and

the second antenna to read at least a portion of a plurality of RFID tags including the one or more RFID tags of the first set of one or more gaming chips stored in the lower tray and the one or more RFID tags of the second set of one or more gaming chips stored in the upper tray.

15. The dual-chip tray system according to claim 14, wherein the one or more RFID readers are configured to use:

the first antenna to read the one or more RFID tags of the second set of one or more gaming chips stored in the upper tray; and

the second antenna to read the one or more RFID tags of the first set of one or more gaming chips stored in the lower tray and the one or more RFID tags of the second set of one or more gaming chips stored in the upper tray.

16. The dual-chip tray system according to claim 13, wherein the one or more RFID readers are configured to use:

the first antenna to read at least one of one or more RFID tags of the first set of one or more gaming chips stored in the lower tray and to read the one or more RFID tags of the second set of one or more gaming chips stored in the upper tray; and

the second antenna to read the one or more RFID tags of the first set of one or more gaming chips stored in the lower tray.

17. The dual-chip tray system according to claim 13, wherein the one or more RFID readers are configured to determine, based on an aggregate relationship of a first reading result via the first antenna and a second reading result via the second antenna, the first set of one or more gaming chips stored in the lower tray and the second set of one or more gaming chips stored in the upper tray.

18. The dual-chip tray system according to claim 13, wherein the one or more RFID readers are configured to use the first antenna to read the one or more RFID tags of the second set of one or more gaming chips stored in the upper tray, and use the

second antenna to read the one or more RFID tags of the first set of one or more gaming chips stored in the lower tray.

19. The dual-chip tray system according to claim 13, further comprising a shield configured to shield electromagnetic waves from the first antenna or the second antenna.

20. The dual-chip tray system according to claim 13, further comprising a jamming antenna configured to generate electromagnetic waves to at least partially cancel or weaken the electromagnetic waves from the first antenna or the second antenna such that the one or more RFID readers do not read, via the first antenna, the one or more RFID tags of the first set of one or more gaming chips stored in the lower tray, or do not read, via the second antenna, the one or more RFID tags of the second set of one or more gaming chips stored in the upper tray.