using the roller or the like and inspects the cards, and thus cannot inspect that the predetermined number of cards (416 cards in eight decks) are prepared with the plurality of cards being in the card shooter apparatus.

[0005]

If cards in which an IC chip or the like is embedded and that can be remotely identified are used, a plurality of cards can be remotely inspected while being in a card shooter apparatus. However, such remote reading of information may have a possibility of theft of information by an advanced hacking technique, and cannot be used for table games.

Citation list

Patent Literature

[0006]

Patent Literature 1: International Publication No. WO02/064225

Patent Literature 2: Japanese Patent Laid-Open No. 2006-271596

Summary of Invention

Technical Problem

[0007]

Embodiments of the present invention seek to provide a card shooter apparatus and a table

game system that may allow inspection that a predetermined number of cards (416 cards in eight decks) are prepared with a plurality of cards being in the card shooter apparatus. Embodiments of the present invention also seek to provide a card shooter apparatus and a table game system that can determine mixing of a fraudulent card with a plurality of cards being in the card shooter apparatus.

Solution to Problem

[0007a]

An aspect of the present invention provides a card storage apparatus unit that stores a predetermined number of decks of game cards, having an optical sensor that *receives* reflected light of light applied to end surfaces of the plurality of cards stored in the card storage unit;

a playing card counting unit that receives a signal from the optical sensor and counts the quantity of cards stored in the card storage unit;

a count determination unit that determines from an output of the playing card counting unit whether the quantity of the cards stored in the card storage unit is a predetermined quantity, and

an output unit that outputs the determination of the count determination or unit,

wherein the optical sensor is placed so as to receive reflected light from end surfaces of all of the plurality of cards stored in the card storage unit, or configured to be movable across a predetermined section by a sensor scanning unit so as to receive reflected light from end surfaces of all of the plurality of cards stored in the card storage unit and the playing card counting unit is configured to decide the quantity of the cards based on information obtained from the optical sensor on a minute clearance between the plurality of cards stored and stacked in the card storage unit or a black portion present in the cards, or both the minute clearance and the black portion.

[0008]

There is also disclosed a card shooter apparatus including: a card shooter unit including a card storage unit that stores a plurality of cards in a horizontal stack, and an opening through which the cards can be slid from the card storage unit and taken out onto a game table; a card reading unit that reads the number of cards taken out from the card shooter unit; a win/loss determination unit that determines win/loss of a card game based on information on the number of the plurality of cards from the card reading unit; a communication unit that transmits the information on the number of cards read by the card reading unit; an optical sensor that receives reflected lights of lights applied to end surfaces of the plurality of cards stored in the card storage unit; a playing card counting unit that receives a signal from the optical sensor and counts the number of the plurality of cards stored in the card storage unit;

and a count determination unit that determines from an output of the playing card counting unit whether the number of the plurality of cards stored in the card storage unit is a predetermined number, wherein the optical sensor is placed so as to receive reflected lights from end surfaces of all of the plurality of cards stored in the card storage unit, or configured to be movable across a predetermined section by a sensor scanning unit so as to receive reflected lights from end surfaces of all of the plurality of cards stored in the card storage unit.

[0009]

There is also disclosed a table game system. The table game system includes: cards each having a molecular sequence for encoding deck information indicating a deck of cards; and a card shooter apparatus including a card shooter unit including a card storage unit that stores a plurality of cards in a stack, and an opening through which the cards can be slid from the card storage unit and taken out onto a game table, wherein the card shooter apparatus further includes a card reading unit that reads the number of cards taken out from the card shooter unit, a win/loss determination unit that determines win/loss of a card game based on information on the number of the plurality of cards from the card reading unit, a communication unit that transmits the information on the number of cards read by the card