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- Declarations under Rule 4.17:**
- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

[Continued on next page]

- (54) Title: HAND-FORMING CARD SHUFFLING APPARATUSES INCLUDING MULTI-CARD STORAGE COMPARTMENTS, AND RELATED METHODS

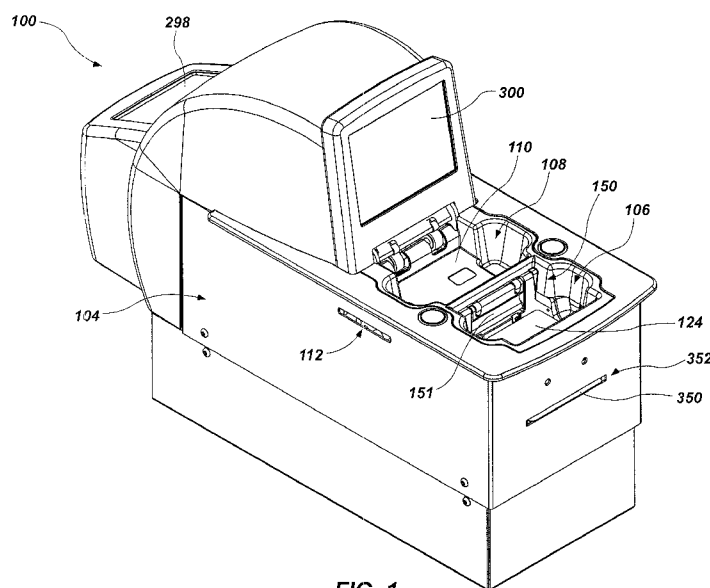


FIG. 1

(57) Abstract: Card shufflers usable in forming and dispensing randomized playing card hands for use in playing card games include a card input mechanism for inputting cards into the card shuffler, a card storage device for receiving cards from the card input mechanism and temporarily storing cards within the card shuffler, and a card output mechanism for outputting shuffled cards from the card shuffler. The card storage device may include a wheel configured to rotate within the card shuffler. The rotatable wheel may have a plurality of card storage compartments therein, each of which may be sized and configured to hold two or more cards therein. Related methods involve the use of such card shufflers in playing card games.



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AMENDED CLAIMS

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1. A card shuffler for shuffling cards and managing at least one security card, comprising:
 - a card input area for receiving a stack of playing cards including the at least one security card, the at least one security card not being usable in a playing card game for which the card shuffler is configured to shuffle playing cards;
 - a card input mechanism for inputting playing cards and the at least one security card of the stack of playing cards from the card input area and into the card shuffler;
 - a card storage device for receiving the playing cards and the at least one security card from the card input mechanism and temporarily storing the playing cards and the at least one security card within the card shuffler, the card storage device comprising a movable wheel configured to rotate within the card shuffler, the movable wheel comprising a plurality of card storage compartments, at least a majority of the card storage compartments sized and configured to hold two or more cards therein; and
 - a card output mechanism for outputting the playing cards and the at least one security card from the card shuffler; and
 - a card output compartment for receiving the playing cards and the at least one security card from the card output mechanism,wherein the card output mechanism is configured to eject the at least one security card into the card output compartment prior to ejecting any other playing cards of the playing cards into the card output compartment during a shuffling operation performed by the card shuffler.

2. The card shuffler of claim 1, wherein the card output mechanism is configured to eject playing cards out from the card storage compartments and into a card output compartment such that the playing cards are oriented at a downward angle of between about 2° and about 5° relative to a horizontal plane at all times as the playing cards move from each card storage compartment and into the card output compartment.

3. The card shuffler of claim 2, wherein the card output compartment is configured such that playing cards held therein are oriented at an angle of between about 2° and about 5° relative to the horizontal plane.

4. The card shuffler of claim 1 or claim 2, further comprising a card reading system configured to acquire data from one or more images of playing cards moving through the card input mechanism and toward the card storage device and to identify one or more distinguishing characteristics of the cards comprising at least one of rank and suit using the one or more images.

5. The card shuffler of claim 1, further comprising a control system configured to control operation of the card shuffler, the control system including:
a touch screen control panel configured to receive input information from an operator of the card shuffler and to output information to the operator of the card shuffler; and
a player display mounted to the card shuffler, the control system configured to display information to players of the playing card game in which the card shuffler is used on the player display.

6. The card shuffler of claim 5, wherein the control system is configured to display information to players of the playing card game in which the card shuffler is used on the player display relating to at least one of minimum or maximum bet quantities, an indication of a winning hand, a recommended player card hand, game advice, game rules, a casino identity, and identification of a game being played in conjunction with the card shuffler.

7. The card shuffler of claim 5 or claim 6, wherein the touch screen control panel is oriented for viewing from a first side of the card shuffler, and the player display is oriented for viewing from an opposing second side of the card shuffler.

8. The card shuffler of claim 1, further comprising a drip pan located and configured to divert fluid spilled into at least one of the card input area and the card output compartment to an exterior of the card shuffler.

9. The card shuffler of claim 8, further comprising at least one outer cover including at least one aperture extending therethrough, the at least one aperture located and configured to allow spilled fluid diverted by the drip pan to pass out from the card shuffler through the aperture in the outer cover.

10. The card shuffler of claim 9, wherein the drip pan extends at least partially through the at least one aperture extending through the outer cover.

11. The card shuffler of any one of claims 8 through 10, wherein the drip pan is located vertically below at least one of the card input area and the card output compartment.

12. The card shuffler of any one of claims 8 through 10, wherein the drip pan comprises a generally planar base member oriented generally horizontally within the card shuffler, the drip pan including one or more lateral sidewalls extending vertically from the base member so as to laterally confine fluid spilled on the generally planar base member.

13. The card shuffler of claim 1, wherein the card input mechanism comprises:
a plurality of rollers located and configured to drive movement of playing cards and the
at least one security card along a card input path extending from the card input
area to toward to the card storage device;
a motor configured to drive rotation of at least some rollers of the plurality of rollers; and
at least one slide bar extending continuously between the rollers of the plurality of rollers
along the input path, the slide bar having an upper surface recessed from apexes
of the rollers of the plurality of rollers by an average distance of about 0.07 inches
(about 1.778 mm) or less.
14. The card shuffler of claim 13, wherein the slide bar is located and configured to
reduce operational noise generated by playing cards moving along the input path responsive to
operation of the card input mechanism.
15. The card shuffler of claim 13 or claim 14, wherein the at least one slide bar
comprises two slide bars oriented at least substantially parallel to one another.
16. The card shuffler of claim 1, further comprising a control system configured to
control operation of the card shuffler in a first operational mode during use of the card shuffler in
the playing card game with at least a predefined number of players, and to control operation of
the card shuffler in a second operational mode during use of the card shuffler in the playing card
game with less than the predefined number of players, wherein the control system is configured
under control of a program to cause the card shuffler to form playing card hands in a first number
of designated adjacent card storage compartments of the plurality of card storage compartments
in the first operational mode, and the control system is configured under control of the program
to form playing card hands only in a second number of designated adjacent card storage
compartments of the plurality of card storage compartments and not in any other card storage
compartments of the plurality of card storage compartments in the second operational mode, the
second number being lower than the first number.

17. The card shuffler of claim 16, wherein the control system is configured under control of a program to cause the card shuffler to form a first number of playing card hands in respective designated adjacent card storage compartments of the plurality of card storage compartments in the first operational mode, and the control system is configured under control of the program to form a second number of playing card hands in respective designated adjacent card storage compartments of the plurality of card storage compartments in the second operational mode, the second number of playing card hands being less than the first number of playing card hands.

18. The card shuffler of claim 1, further comprising:
a control system configured to control operation of the card shuffler; and
a printer operationally coupled with the control system, the control system configured under control of a program to cause the printer to print information onto a printable medium using the printer, the information usable in verifying a winning playing card hand generated by the card shuffler in a round of game play.

19. The card shuffler of claim 18, wherein the control system is configured under control of the program to print information onto the printable medium using the printer including identifies of all cards in a winning playing card hand generated by the card shuffler in a round of game play.

20. The card shuffler of claim 1, further comprising at least one light-generating device located within the card shuffler and configured to generate light within the card shuffler, the light not used by any sensor of the card shuffler.

21. The card shuffler of claim 21, wherein the at least one light-generating device is located and configured to interfere with any imaging device located within the card shuffler and not used by the card shuffler for operation thereof.

22. The card shuffler of claim 20 or claim 21, wherein the at least one light-generating device comprises a strobe light configured to intermittently generate flashes of light.

23. The method of claim 24, further comprising:

storing information relating to the playing card hands or the playing card game in a memory device of a control system of the card shuffler; and

upon randomly dealing a winning hand of predefined composition, transmitting the information from the card shuffler to a remote server in response to a signal generated by the control system of the card shuffler to indicate that the winning hand has been dealt to the remote server.

24. A method of using a card shuffler configured to generate a number of randomized playing card hands for use in a playing card game, the method comprising:

placing a stack of unshuffled playing cards into a card input area of the card shuffler, the stack of unshuffled playing cards including at least one security card not usable in the playing card game;

using the card shuffler to generate randomized playing card hands in card storage compartments within a card storage device of the card shuffler;

dispensing the playing card hands from the card storage device into a card output area of the card shuffler; and
obscuring a bottom card of the randomized group of playing cards hand using the at least one security card.

25. The method of claim 24, wherein dispensing the playing card hands from the card storage device into a card output area of the card shuffler comprising dispensing the at least one security card into the card output area prior to dispensing the playing card hands into the card output area.

26. The method of claim 24, further comprising using the card shuffler to position the at least one security card beneath a randomized group of playing cards within a card storage compartment.

27. The method of claim 24, further comprising using the card shuffler to position the at least one security card above a randomized group of playing cards within a card storage compartment.

28. The method of claim 24, further comprising using the card shuffler to place that at least one security card within a designated security card storage compartment of the card storage device of the card shuffler.

29. The card shuffler of claim 1, further comprising at least one designated security card storage compartment in the card storage device for receiving just the at least one security card while temporarily storing the playing cards and the at least one security card within the card shuffler.

30. The card shuffler of claim 35, further comprising a control system configured to identify the at least one security card as the at least one security card is inserted into the card storage device and to cause the at least one security card to be inserted into the at least one designated security card storage compartment of the card storage device.

31. The card shuffler of claim 1, further comprising a control system configured to cause the card output mechanism to eject the at least one security card into the card output compartment prior to ejecting any other playing cards of the playing cards into the card output compartment.

STATEMENT UNDER ARTICLE 19 (1)

Applicant has amended original claims 1-6, 8, 11, 13, 14, 16, 19, 21, 23, 24-27, and 30. Claims 17, 18, 20, 22, 28, and 29 have been canceled. Original claims 19, 21, 23-27, and 30 have been renumbered as claims 17-24, respectively. Claims 25-31 are newly added herein. The amendments have no impact on the description and the drawings.