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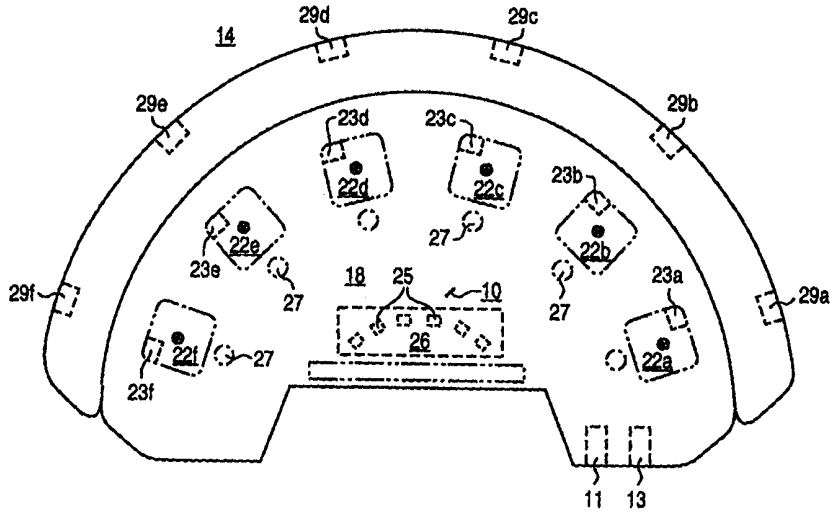

(57) Abstract

A casino game table (14) and method (figs. 6A–6B) for interactive live table game play such as blackjack, poker, and the like, includes a computer–controlled display (10) forming an upper member of the table to display gaming images including card representations. The game table may include a dealer position (26) and a number of player positions (22) at which are displayed representations of game cards and other game images during game play. Alternative embodiments of computer–controlled displays include rear projection systems (fig. 2A), and matrices of contiguously–assembled cathode–ray display devices (fig. 5A) or liquid–crystal or plasma–panel display devices. A method of bonus play associated with a casino card game is disclosed that may be implemented with actual cards or in an embodiment of computer–controlled graphic display system that displays game images in association with touch–sensitive regions as inputs to the computer controlling the display that is viewable on the playing surface of the table.

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GAMING APPARATUS AND METHOD

Field of the Invention:

This invention relates to casino games and more particularly to a game table for playing a variety of casino games such as blackjack, poker, and the like, using various embodiments of computer-controlled display screens disposed in a table top under control of a processing system that drives the graphics displays of card representations for game play in response to activations of touch sensitive regions by players and dealer.

Background of the Invention:

For table games, casinos sometimes measure the number of games dealt per hour by a dealer. This measure can depend upon such variables as the type of game being played, the number of players, and the like. Many casino table games, such as poker, use a percentage of each game's pot (cumulative wagers of the players during any round of game play) as the casino's revenue-producing criteria. Other revenue-producing criteria include fees according to lapsed time, or time on a device, or simply flat fees. Thus, it is beneficial to have a large number of players. However, play time usually increases with increased count of players participating in the table game because of more cards to deal, more card shuffles are required, more deck changes and dealer errors are encountered, and more hands are available to evaluate.

In addition, the game can also be affected by cheating. A new deck of cards can be marked so that an unscrupulous and cunning player can shift the odds away from the other participants during game play. To minimize card-marking, a deck of cards is short-lived and will be used for only several shuffles before being discarded for a new deck. Even though there is an after-market for used decks of cards, new card purchase is a large and expensive burden of doing casino business.

Cheating is not limited to card marking. Other ways to alter the odds of the game in favor of a particular player include suborning the dealer (termed "cross-roading" in the art). If the dealer is sufficiently proficient, he/she can shuffle and "stack" a deck of cards for any eventual delivery. This form of cheating cannot be obviated by a change of cards, but may be somewhat limited thereby except when a pre-set deck, or "cooler", is introduced to the table as a result of collusion between players and dealer.

Certain known electronic video poker and blackjack games are structured to present card representations on a video display screen for the play of a hand of poker, or blackjack, or the like. Usually, such games do not pit the player against another human player but against the machine instead. Most video poker games currently available are constructed so that to win the player tries to obtain the highest ranking poker hand possible: the higher the hand, the higher the payout. See, for example, U.S. Pat. No. 5,356,140. Also, users of video poker and blackjack games may be disappointed by the absence of the camaraderie often found and enjoyed by participants

in a communal game. Also lacking is the competitive feeling of pitting oneself against the skill and luck of others. Games of these types are initiated and prompted by the player via interactivity only with the associated machine.

There are game tables that are structured to overcome many of the problems described above. For example, a casino game table may use separate video displays for a live dealer and for each of a multiple number of player positions. In such game tables, each player position is equipped with a small, private video display unit positioned and constructed so that it can be viewed only by the player at the corresponding player position while the dealer position includes a video display that is viewable by the dealer and all players at the game table. See, for example, U.S. Pat. No. 5,669,817.

Summary of the Invention:

In accordance with the present invention, a casino card table includes a graphic display system for displaying card representations dealt to players and a dealer. Broadly, the present invention comprises a casino table having a graphic display screen forming the top of the table. Image creation apparatus including a data processor operates to create images such as representations of playing cards, the table felt, player and/or dealer controls, and the like, for display on a surface that forms the table top. The system-created display images of cards and controls, and the like, are presented on the table top as a graphic display viewable by the players. The created display images

may include playing card representations, graphics forming a dealer position for game supervision, and a number of player positions.

In one embodiment of the present invention, the table top display is formed using optical rear projection techniques that operate to project images (i.e., the card representations, etc.) onto a back or rear surface of the table top display for viewing on an upper or playing surface of the table top by the players. In this one embodiment, the projection techniques may include a mirror that is positioned to receive the images from the image creation and projection apparatus to be reflected onto, or to be directly projected onto the rear surface of the table top display. In another embodiment of the invention, the table top display may include a matrix of closely-positioned cathode ray tube (CRT) displays or liquid crystal displays (LCD's) or other large-area panel displays to display the required game play representations. Alternatively, one large LCD panel or conventional plasma panel display may also be used to display the required game play representations.

In other embodiments of the game table of the present invention the surface of the table top display may include touch-screen capability so that representations of game controls can be displayed at a dealer position and at player positions to facilitate combined touch-oriented controls of game play of the particular casino game for which the table is programmed, all with the benefits of dealer and player interactions among themselves and with the computer-controlled table-top display. For example, a dealer position may include touch-sensitive positions as input devices and associated graphic

representations as graphic outputs that guide game play including, for example, directing that cards be dealt, in the order they are to be dealt, and the number of cards that are to be dealt, according to the rules of the particular game. In addition, each of a number of player positions may include a number of associated wager representations with sensors that detect the placement of a wager, which can then also be indicated at the dealer position. Alternatively, the entire viewing surface of table top may be made touch sensitive and individual areas may be made touch sensitive in conventional manner for controlling diverse graphical images that are operational during game play, or that are collateral to game play, such as advertising, reservation entries, accounting tallies, and the like. Such game tables may be interactively linked via computer networks to facilitate contests and tournaments between remote locations.

Physical cards and the associated costs of card are eliminated, and the opportunities for cheating and suborning the dealer are substantially eliminated. In addition, game play is speeded up, security is increased, and new games and rules variations may be conveniently implemented using new computer programs that vastly simplify reconfigurations of the table without requiring any physical alterations.

Brief Description of the Drawings:

Figure 1 is a top view of the game table constructed according to one embodiment of the present invention, illustrating a game table top that forms a rear projection screen upon which images can be displayed to represent a dealer position, a number of player positions, and playing card representations;

Figure 2A is a sectional rear view of the game table shown in Figure 1, showing the image generating and projection apparatus used to form and project images onto the rear surface of the table top screen;

Figure 2B is a sectional view of the table top;

Figure 3A is a pictorial illustration of a region of the display for viewing at a player location or site on the table top of the game table of Figure 1;

Figure 3B illustrates one embodiment of a graphic display on the table top display under control of a touch-sensitive region at a player location to selectively view and hide values of the card representations provided to a player at the player site shown in Figure 3A;

Figure 3C is a flow chart of the programmed routine for illustrating playing card representations in scrolled up configuration for viewing by a player, as shown in Figure 3B;

Figure 4A is a pictorial illustration of one display configuration at a dealer site of the game table of Figure 1;

Figure 4B is a block diagram of one computer network for operating a casino game table of Figure 1;

Figure 4C is a pictorial illustration of a cluster of game tables of Figure 1 forming an interlinking computer network;

Figures 4D and 4E are block schematic diagrams of embodiments of computer network configurations for operating a game table of Figure 1;

Figure 5A is an alternate embodiment of the table top display of Figure 1;

Figure 5B is a pictorial illustration of one operating mode of the embodiment of the table top display of Figure 1; and

Figures 6A and 6B comprise a flow chart of the programmed routine by which one form of game play proceeds according to the present invention.

Description of the Preferred Embodiment:

Referring now to the top view and rear sectional views of Figures 1 and 2A, there is illustrated a casino game table 14 including a base member 12 for supporting the table top 10 that is a display screen upon which is displayed playing card representations and other graphical representations of card play (i.e. castles of various shapes and colors), according to the game being played, in place of actual playing cards.

The table top 10 may include one or more cathode ray tubes (CRT) as illustrated in Figure 5A, or liquid crystal displays (LCD), or other large-area display panel. In another embodiment of the invention, as illustrated in the sectional view of Figure 2A, the table top 10 forms part of a rear image projection system with the table top 10 forming a projection screen that provides a substantially horizontal viewable display surface 18 and an image-receiving rear surface 20. A projection system (including an image projector 40, and a table I/O network interface 28, and a computer or data processor 36) operates to generate images, representing a number (six, although any number will suffice) of player sites 22 (22a, 22b, ..., 22f) and a dealer site 26. Each of the player sites 22a-22f may display playing card representations and game-play controls and wagering controls suitable for the conduct of game play, and may also display an information viewport 23a-23f in which wagering credits, game tallies, or the like, may be displayed, for example, upon touch command of a touch-sensitive area of the surface, as later described herein. Network interface 28 may link a number

of sensors and touch-sensitive areas at player and dealer sites to a single computer 36. Alternatively, individual computers may be provided to operate each player and dealer site under local-area control and interaction of a computer 36 via the interface 28 as later described herein.

In addition to images representing player cards, there may also be displayed at each player site 22a - 22f, wager locations 27 and game-directing controls as illustrated in Figure 4A, and the like, as generated by the computer 36. Display images are generated by the computer 36 in response to game-directing, controlling inputs received from dealer and players for projection of such images onto the image receiving surface 20 on the rear side of the table top 10 for viewing on the top surface 18. Active players may be identified to the dealer (and to other players) as icons 25 (for example, in contrasting colors for active and inactive status) on the portion of the display 26 near the dealer site. These icons 25 may also be touch-sensitive regions, as later described herein, for example, to implement transfers of credits for a bill drop or a credit card entry to a selected player under the control of a dealer. The present invention is described with reference to conventional blackjack casino game, supplemented by a novel bonus component that may form an alternate embodiment of the game, as later described herein. However, it should be noted that other casino table games (e.g., any one of the variations of poker, baccarat, etc.) can use the present invention merely by reprogramming the computer 36 using a selection of resident programs for generating images appropriate for the desired casino game. Supplemental component such as bill charges or bill-drop security box 11 and a credit-card, or smart-

card, reader 13 may also be housed in the table near the dealer site 26 to facilitate wagering activity under a dealer's control. Additionally, each player site 22a-22f may be equipped with a card reader 29a-29f of the type that enables a player to register game plays in a casino's database of player information upon which casino privileges or courtesy accommodations can be allocated. Picture-in-picture displays may be conveniently implemented in the casino game table of the present invention, for example, to display game rules, instructions, or help tips to any player at any stage of game play, or to display advertisements or generally any display-worthy images.

In the illustrated embodiments of Figures 2A and 2B, the table top 10 includes an image-receiving surface 20 that may include a translucent light diffuser, or conventional image filter, and may include a protective top layer 19 to provide anti-reflective surface as well as physical security against breakage. The top layer 19 may be a diffuser screen or a directional viewing filter, and may include touch-sensitive regions thereon. An image-receiving surface 20 is disposed as a lower layer beneath the top layer 19 to receive projected images from a conventional image projector 40.

The image generating and projection system 28, 36, 40 is shown housed in the table base member 12. The I/O interface 28 and computer 36 operate in response to control signals from player controls (preferably, connected via signal conductors 38 to touch-sensitive regions of the display surface 18 or top layer 19) to generate the images for the player and dealer positions 22, 26 respectively, under program control that is appropriate for the desired casino game. For that reason, the computer 36 (which, for

example, may be a programmed personal computer) is connected to a conventional image projector 40 as an output device. Touch-sensitive areas of the top layer 19 of the table top 10 may be connected as input devices via signal lines 38 and I/O interface 28 for operating to convey control information received at the various touch-sensitive areas to the computer 36. Alternatively, additional detectors 37 such as infrared (IR) or other image detectors 37 may be positioned in alignment with wager areas 27 (or bonus wager areas 52, as shown in Figure 3A) to detect the presence of a wager in an area 27 associated with a player site 22a-f, as an input to the I/O interface 28, or to detect the presence of a finger at a touch sensitive area of the display as a control input to the computer 36.

The image projector 40 (which may be of a type available, for example, from nView Corporation of 860 Omni Boulevard, Newport News, Va.) is positioned and aligned to directly project luminous images formed by the computer 36 onto the image-receiving surface 20 of the table tap 10. Of course, other appropriate lens and/or reflector systems may be arranged with respect to projector 40 to project generated gaming images onto the image-receiving rear surface 20.

In use, the computer 36 generates the necessary image data for display at the player and dealer sites 22, 26, including card representations of distinctive card values, wagering positions, payout values, game controls, and the like. One typical display at a player site is illustrated in Figs. 3A and 3B, and a typical display at the dealer site 26 is illustrated in Figure 4A. Of course, other embodiments of sites at which game play

participants (i.e., players or dealer) may interactively control game play are also possible, for example, as illustrated in Figure 5B, and including all substantially similar participant sites positioned about the table top configured for a game of 5-card poker.

Referring now to Figure 3A, one embodiment of a player site 22b is illustrated. Other player sites (22a, 22c, ..., 22e) are substantially identical so that the description herein of player site 22b is also applicable to the other player sites as well. As illustrated in Figure 3A, the player site 22b includes touch-sensitive areas 50, 52, and 56 that overlay images displayed thereon by the projector 40. A WAGER sensor 37 aligned with wager area 50 detects a wager placed thereon by a player in order to participate in the casino game being played (i.e., blackjack). The BONUS wager area 52 may include a similar sensor that detects a wager which indicates the player's desire to participate in a bonus play associated with the underlying game, as later described herein. While any one of a number of bonus play situations may be used, disclosed later herein is one embodiment of bonus play that is preferred.

Card representations 56a, 56b are displayed at a card area when the player has placed a wager in the wager area 50, and all other players have placed wagers, and the game has been initiated by the dealer, as later described herein, and the cards have been "dealt" in response to execution of the computer program that controls operation of the casino game being played. The card representation 56 is shown in face-down orientation. However, the area of the card representation 56 is also touch-sensitive so that the player need only touch the area (i.e., the cards representations 56a, 56b) as an

input to the computer 36 which controls generation and projection of an image that thus presents the card representations with at least their corners folded up (or, fully face up) to reveal their values, as shown in Figure 3B. Of course, depending upon the particular casino table game with which the game table of the present invention is used, the card representations 'dealt' to a player may not be face down, but may be dealt face up for all players and dealer to see. Or, alternatively, some card representations may be 'dealt' face down, and some may be 'dealt' face up. Where desirable for particular computer-programmed configuration(s) of the game table of Figure 1, one or other layers of the table top illustrated in Figure 2B may include restrictive viewing filters at player sites to inhibit viewing outside of a limited viewing angle occupied only by such player. Player sites that are not active may be deleted from the display or may otherwise be blanked to provide single or multiple displays of player(s) and dealer as game participants. Alternatively, player sites not occupied by active players may be used as regions for displaying advertising, or schedules of events, or the like.

Referring now to Figure 3C, there is shown a flow chart of the programmed routine for displaying card representations in scrolled up display, as illustrated in Figure 3B. Specifically, as one or more card representations are displayed, for example, at a player site 22b in face down configuration, as illustrated in Figure 3A, a player may touch the touch-sensitive area where the card representations are displayed, and the I/O network 28 and computer 36 detect 39 the touch to initiate 41 the 'reveal' sequence. A series of digital images may be stored, for example, at successively-addressed locations in mass storage of the computer 36 for access sequentially 43 to

control display of successively-incremented 'movements' in the scrolling up of a corner or corners of card representations(s), to a final display image as shown in Figure 3B showing the card values of the displayed card representations for as long as the player maintains finger contact with the touch-sensitive area at which the card representations are displayed. As a player removes finger touch from the area in which the card representation(s) are displayed, the I/O network 28 and computer 36 detect the absence of input, and initiate 47 a scroll back or 'cardack' sequence to face down configuration again, displaying 49 only the backs of the card representations as shown in Figure 3A until 51 the player again touches the displayed card representations. The scroll back routine 47 may be implemented by the computer 36 sequentially accessing the digital images in successively-addressed locations in mass storage in the reverse sequence from the scroll up routine, previously described. In this way the displayed card representations appear to roll back down to face down configuration 49.

One embodiment of a dealer's site 26 is illustrated in Figure 4A. Each player who participates in the game places a wager at the WAGER area 50 in an associated player site 22b, which wager is detected by the associated touch-sensitive area of the display or by a sensor 37 responsive to a wager placed in the area 50 of the player site 22b. This causes the computer 36 to recognize participating players in order to generate card images 60a - 60e for each participating player, to be displayed at a player site 22 and at the dealer site 26 as card pairs 60. Thus, as Figure 4A illustrates, each player site is identified to the dealer, for example, by an encircled number (1, 2, ..., 5) 62. When a wager is placed in the WAGER area 50 at any of the player sites 22, card

representations 60 will appear for each participating player (when 'dealt', as described below). Other recognitions of a wager placed by a participating player may be provided, such as a highlighted or color-enhanced display image of the WAGER area 50. For example, Figure 4A illustrates, by the card representations 60a, 60c, 60d, and 60e, that the players using the associated player sites 22a, 22c, 22d, and 22e are participating in the game. In addition, the encircled numerals 62 may be changed from one color (e.g., green) to another color (e.g., yellow) to inform the dealer which player positions 22 have placed wagers in the BONUS area 52 of the associated player site 22 to participate in bonus play. Such BONUS wagers are detected by the associated sensor to control the computer 36 to display visual enhancements at the dealer site and player site that indicate the BONUS wager thus placed.

Figure 4A also indicates which of the players is then active for the dealer's attention during the game, for example, by the enlarged or other visually-enhanced representation of the cards 60d for that player. Thus, as Figure 4A illustrates, the player at player site 22d is presently active (i.e., in a condition to receive additional cards, if desired) as indicated by the larger card representations 60d (or by other displayed visual distinctions). As cards are 'dealt' to such active player, responsive to dealer-activated computer controls, as later described herein, corresponding numbers of larger card representations are generated and displayed 60d under control of the computer 36.

Dealer site 26 also includes a number of touch-sensitive areas that form the controls by which the dealer guides the progress of game play. Thus, a touch-sensitive area 66 overlays a "HIT" area image which, when touched, causes an additional card representation to be "dealt" to the player then active. The "FOLD" touch-sensitive area 68, when touched by the dealer, provides input to the computer 36 that a player has surrendered his hand (because his cumulative card value count has exceeded 21, unless game rules or BONUS play, later described herein, provide otherwise). The "STAND" touch-sensitive area 70, when touched by the dealer provides input to the computer 36 that a player has decided not to take any more cards, but is satisfied with the current card values which, according to game play, will not exceed a cumulative value of 21. For more esoteric game play, "SPLIT" and "DOUBLE DOWN" touch-sensitive areas 72, 74 allow multiple hand play in accordance with conventional rules of play. Alternatively, selected touch-sensitive areas for control functions such as "SPLIT" and "HIT" may be displayed and made active at a player site 22 rather than at a dealer site 26. To end one game, and for dealing cards for a new game, the touch-sensitive "DEAL' and "NEW GAME" areas 76, 80 are provided as overlays to the corresponding images produced thereat under control of the computer 36. Other touch-sensitive areas at the dealer site 26 may include a SURRENDER area 82 that allows the dealer to indicate that a player wishes to surrender his/her hand before game play has concluded and have returned a portion of the wager made by the player when the game started. An INSURANCE area 84 allows a player to indicate an insurance wager if the dealer card representations 83 include an ace. A CHECK area 86 allows the

dealer, when an ace or 10-point card representation turns up for the dealer on the initial deal, to check for a blackjack. Other touch-sensitive areas and other touch-responsive input devices such as mechanical button switches, IR sensors, and the like, may be provided at selected sites on and around the table top 10 as necessary for dealer and player actuations during participation in the particular game for which the table of the present invention is computer programmed. In addition, certain of the dealer and player control representations can be made to appear and disappear in the same location, depending upon the mode of game play then existing, so that control representations for only those touch sensitive areas needed for guiding game play through such then-existing mode are displayed, and are active. Finally, also displayed in the dealer site 26 are card representations 83 for the dealer. With touch-sensitive controls available to the dealer (and to players) as needed to guide game play through various stages of a game, progress through interactive game play remains under control of the live dealer who then also collects wagers, pays out winnings, and generally controls game play. Training of dealers is thus greatly simplified, and opportunities for cheating are further diminished since only certain touch-sensitive controls may be active for only selected possible dealer and player activities throughout various stages of a game. In this way, game play may be interactively controlled by dealer and players as implemented under computer control in accordance with the present invention.

Touch-sensitive areas disposed about the upper surface of the table top 14 as previously described above may include conventional proximity sensors, or IR sensors, or capacitive sensors including matrix arrays of transparent electrodes disposed on a

surface of one or other layers shown in Figure 2B that form the table top 10. The protective top layer 19 may contain touch-sensitive assemblies and/or may serve as a protective layer to minimize possible damage to the display screen resulting from careless or abusive behavior by game participants.

Referring now to Figure 4B, there is shown a block diagram of a local network for operating a casino game table according to one embodiment of the present invention. Computer 36 controls the table display 40, or optionally may control individual displays 40' such as at individual player and dealer sites, or individual displays 100a-100s of a composite display panel 10', as illustrated in Figure 5A. The computer 36 receives inputs from touch-sensitive areas 19, 50, 52, 56 at dealer and player sites, and also receives inputs from bet sensors that may operate as touch sensors 50, 52 or as infra-red sensors 37, or the like, the computer 36 also receives inputs from bill acceptor 11 and readers 13, 29 of credit cards and player identification cards to facilitate crediting wager accounts of players, and reporting game play information to a casino's database of player information, as previously discussed.

Referring now to Figure 4C, there is shown a pictorial illustration of a cluster of such casino game tables, as described above, arranged at spaced locations for interactive operation as in competition or tournament game play. Each such table 14 of a plural number of tables have their associated computers 36 networked via a cluster controller 42, as shown in Figure 4B, with a central computer 44 using standard TCP/IP bus protocols 46, standard Ethernet connections, and the like. Operation of a

plural number of tables 14 on a central computer 44 also greatly facilitates collection of data generally regarding prize pools, accounting matters, security checks, play history, and the like.

In other embodiments of the casino game table according to the present invention, an individual table 14 may include a plurality of individual relatively small-capacity, inexpensive processors or computers 48 associated with each of a plurality of displays 53 at dealer and player sites (and as table background display), with individual touch-sensitive input controllers 55, as inexpensive modularized assemblies, for linking, together to a main table controller or computer 57, as shown in the block schematic diagram of Figure 4D, via a standard computer bus 59. Alternatively, each of a plurality of modularized individual assemblies associated with each of a plurality of displays 101, with associated video controller circuitry 103 and touch sensor input controllers 105, may all be linked, as shown in the block diagram of Figure 4E, to a common table controller 107, for example including an interface 28 and computer 36, as previously described.

In the embodiments of casino game tables described above, the computer 36 associated with a table or the central computer 44 associated with a cluster of tables may include large memory space to store the total pixel arrays of all displays, or for the entire display area, with each display (or areal portion of an entire display) assigned a subset array within the memory space to provide the image data to be used for each particular display or portion of an entire display. This permits resident storage of all

display attributes and input responses for several hundred different casino games and variations thereof. This facilitates programmability of desirable features and reconfiguration of a table 14, for example, using a resident set-up utility program that can be accessed and displayed, for example, through the table display or the display at the dealer's site 26 with associated touch-sensitive control inputs thereat (or via secured key entries under casino control) when the table 14 and associated circuitry is powered up, or while a game configuration is in an idle state. Background color on the table top display may be changed, for example, from green to blue or red, or the like, at the election of the dealer or the host casino at appropriate times to elevate the mood or temperament of players, or for other purposes.

As illustrated in the flow chart of Figures 6A and 6B, operation of game play on an embodiment of the game table described above is guided by the live dealer, and a new game begins when the dealer calls for wagers. Each player occupying a player site 22 of game table 10 (Figure 1) may place a wager 61 in the WAGER area 50 to indicate participation in the game. If the player so elects, he/she may also place a wager in the BONUS area 52 for participation in bonus play, as later described herein. The dealer then notifies the players that the wager period is ended, and presses 63 the "start" area 75, or a NEW GAME area 80. The wagers are recorded by the computer 36, and the dealer then collects all BONUS wagers and presses 65 the DEAL area 76. The inputs received by the computer 36 indicating at which player sites 22 wagers were placed in the WAGER areas 50 and BONUS areas 52 thus controls generation of the applicable image data 64 by the computer 36 to display card representations 56 as

"dealt" 67 to those player sites 22 at which wagers are placed in the wager areas 50. In addition, the participating players will have their card representations 60 also displayed (usually face down) at the dealer site 26 to inform the dealer which players are in the game. Players can view the values of card representations "dealt" to them by touching 69 the displayed card representation, as previously described herein.

Those players who have indicated participation in bonus play, by a token or wager placed in the BONUS area 52 of the associated player site 22, will have their representative identification numerals 62 change color (or be altered in other visually-contrasting manner) in the displayed image at the dealer site 26, in the manner described above. Play proceeds according to game play rules through various player options and dealer actions 71, 73, 77, 79, 81, 85, 87-93 to conclusion of the dealt hands and payment 92 of winners, if any. The dealer presses CLEAR 95 to clear the displays of cards and wagers and prepare the table display 10 for the next game.

Card representations that are "dealt" according to game play may be made to instantaneously appear at each station 22, 26 of the player for which the card(s) is (are) intended. However, in one embodiment of the present invention, the computer 36 may be program controlled to produce some animation of the card representations skimming across the surface 18 (Figure 1) of the table top 14 from the dealer position 26 to the recipient player position 22. Also, non-active regions of the display surface between dealer and player sites may be animated to represent water or cloudy sky, or the like. Thus, background display as well as the participant sites may be conveniently

altered, for example, by changing from green background to blue background, or the like, in response to a number of selectable programs that may be resident in computer 36. In addition, a sound system (not shown) may also be used to provide an aural indication of card movement across the surface 18. A sound system under control of the computer 36 may also be used to provide sound bytes or music in conventional manner, for example, of shuffling cards, congratulating a player on a winning hand, receiving a good "hit" card (e.g., drawing an 8 to a hand of 13), or a fanfare upon hitting a blackjack.

Game play is continued under control of the computer 36 which displays an enlarged image of card representations 60 at the dealer site 26 to show the active hand. At the outset, game play may begin with the first participating player to the immediate right of the dealer, i.e., the player at player site 22a. The player with the then-active hand will indicate his desires either verbally or non-verbally (e.g., head shakes, hand motions, player activation of a control button or touch-sensor, etc.) to receive a card i.e., take a hit, stand, or if he has a pair, split them. Alternatively, touch-sensitive areas for controlling such player decisions may be displayed and activated at a player's site, as previously described. In response to a player's requests or instructions, the dealer touches the applicable touch-sensitive areas 66-86 pertaining to the player's desires or game condition. For example, if the player requests another card, he will so indicate to the dealer who will then touch the HIT area 66. Conversely, if the player desires no more cards, he will so indicate to the dealer who will touch the STAND area 70. Under certain conditions, a player or the dealer may also speed up or slow down the

rate of game play in response to a touch-sensitive control input that alters the pace of program execution by the computer 36. Additionally, under certain circumstances, a recent history of game play through the dealt hand(s) of cards may be reviewed, for example, to help resolve a disputed activity or result during game play. This can be accomplished conveniently by storing all inputs and game activities in the computer 36 for recall in whole or in part per hand of game play, or over a selected number of past game plays, for example, for statistical analyses, tallies of winnings within a time interval, and the like.

Traditional game play through random or selective circumstances may be conveniently implemented according to the present invention. For example, if the player has a pair of cards he desires to split, he will so indicate to the dealer who will touch the SPLIT area 72, causing the two card representations to be displayed at the corresponding player site 22, spaced apart from one another, side-by-side, and causing two more cards to be 'dealt' to the player so that the player then has two pairs of card representations 56 displayed before him at locations at the player site 22 that are touch-sensitive. He can then play each pair, taking a hit, or standing, as desired. The card representations are displayed in touch-sensitive areas which may be touched by the player to provide input to the computer 36 for altering the displayed image to show the card representations with turned-up corners, as illustrated in Figure 3B.

Once the active player concludes his active participation, the dealer will so indicate by touching the STAND area 70, which produces input to the computer 36 that

alters the output display to reduce the size of the player card representation 60, as displayed in the dealer site 26, for that player. (The player may still participate in the bonus play, as described below, provided a wager was set in the BONUS area 52 at the outset.) At the same time, the computer 36 alters the output display of the dealer's site 26 to enlarge the card representations 60 for the next active player, and play continues in similar manner though all active player sites.

It should be noted that the casino game table according to the present invention provides multiple game capabilities that may be conveniently reconfigured for other games, for example for poker, or the like, at the casino's election by simply altering the program that controls the display on the playing surface, for example, to include a plurality of substantially similar participant positions about the table, all under program control of the computer 36. Specific controls for a dealer position sequentially move game play from player to player in a fixed rotational order (or randomly in other games such as PAI GOW poker) among the participating players (for example, to deal additional cards as requested by each player), and specific gaming images and touch-sensitive areas may simply be displayed and activated at the same or different positions of participants (i.e., dealer and players) under control of the computer 36 throughout each phase of game play. Of course, certain operating sequences or game rules may be altered at any time as desired, at the election of the casino, simply by selecting an alternate resident program to control gaming operation of the computer-controlled table.

Such changes at random times may include elections to 'shuffle' the deck of card representations when desired, or incorporate the equivalent of additional deck(s) of cards, or limit the number of players, or the size of wagers, or the like, by selecting resident program modules or subroutines to accomplish such purposes that can be conveniently incorporated in conventional manner into the operating routine of a game program, at the election of the casino.

A computer-controlled display screen as the table top of a casino game table in accordance with the present invention permits numerous multimedia possibilities that may be used to provide a game with animation, streaming video, and/or sound, changing background colors or graphics, and the like, at the election of the casino. For example, the card representations may be displayed as exploding when a player receives a point total exceeding that established by game rules (i.e., the player "busts"). In addition, the table top may be animated to display a representation of water, with the card representations floating and skimming across the display representation of water. Further, the shuffling of the cards by a dealer can be animated, as can the showing of card representations flying or otherwise skittering from a graphical representation of a card deck to player sites. Streaming video may include real-time commercial casino advertisements or other product advertisements, or video of a dealer's hands shuffling and dealing cards, or video of a fireworks display to highlight a player attaining a blackjack (if the game being played is blackjack), or hits a bonus jackpot, or some other award.

Sound processors or other sources of sounds or music may be included to incorporate selected sounds with any animation or streaming video. Sounds can be provided for shuffling of the deck of cards, dealing the cards, or any of the various actions taken during game play (e.g., if playing blackjack, sounds for taking a card, splitting, and/or a decision to double down). A voice can be provided congratulating the player on achieving a winning hand, receiving a very good hit card (e.g., receiving an eight (8) on a hand of thirteen (13), or hitting a blackjack).

In an alternate embodiment of the invention, table top display shown in Figure 1 may be formed of a matrix of closely-positioned CRT or LCD or plasma-panel displays, as illustrated in Figure 5A. Specifically, a table top 10' in this illustrated embodiment is formed as a matrix of a plurality of individual display units 100 (100a, 100b, ..., 100s), closely and preferably seamlessly positioned adjacent one another. The display units 100a-100s are coupled via bus cable 104 to a computer or data processor 106 that may include a work station or PC computer with VGA or other video processing platforms for driving one or multiple displays via a network as previously described to generate the requisite images for the particular game and for the dealer and player positions, as described above. The images, of course, are generated for distributed display within or across one or more display units 100 to display the composite images that form an embodiment of a gaming table according to the present invention. In the illustrated embodiment of Figure 5A, touch-sensitive regions suitable for wager detection, card viewing, dealer controls, and the like, as previously described, may be located substantially anywhere in the surface regions of

the assembled matrix of Figure 5A for sensing by the computer or processor unit 106 in a manner as previously described. Such touch screen capability as an on-screen manual input may be provided by the computer or processor unit 106, for example, by sensing in conventional manner capacitive changes at selected coordinates on a raster-scanned display device 100 caused by a finger or wagering token positioned within a region of selected coordinates along the raster-scanned display.

Referring now to Figure 5B, there is shown a pictorial view of a casino game table 14 according to an embodiment of the present invention in which the table-top display formed thereon is illustrated at one stage or phase of game play to include 6 player sites 22a-22f and a dealer site 26. Displayed card representations 56a, 56b at each player site and dealer site are accompanied by displays of one or more touch-sensitive input control areas 56' and display 111, 113 of different bonus designations for the second and fifth player sites relative to the displays of bonus designations at the remaining player sites. This is one characterization of multiple different game rules applicable to different players in a common casino game, (or even in simultaneous games) at the election, for example, of the individual players. Thus, players may select different bonus options to an underlying casino game (e.g., blackjack, with additional payout for all 7's as bonus 1 option, or additional payout for 6, 7, 8 as option 2, or the like), upon activation of a touch-sensitive area 56' (or other manual input device) at a beginning stage of a new, underlying casino game.

The outcome of bonus play does not necessarily depend upon the underlying game. Rather, predetermined cards and sequences of dealt cards are identified for bonus play. For example, sevens may be predesignated for bonus play according to the following jackpot awards:

TABLE 1

Player HAND	Player PAYOUT	Other Bettor's PAYOUT
7 in first two cards	1.5 TO 1	
77 in first two cards	20 TO 1	1 TO 1
777 in first three cards	500 TO 1	25 TO 1
7777 in first four cards	20, 000 TO 1	1,000 TO 1
7777 in predetermined sequence in first four cards	1 million TO 1	10,000 TO 1

According to Table 1, a player participating in bonus play wins a payout depending upon the number and sequence of sevens received during any one hand. For example, if the player's hand (i.e., the originally dealt two cards) contains one seven, he is entitled to one and one half times the wager he placed in the BONUS area 52. (A wager may be placed in the BONUS area 52 only if the player desires to participate in bonus pay. Payouts to the player, and to other players who participate in bonus play, are based upon the amount of any such bonus wager.) If the player's first two

originally dealt cards are both sevens, the player is entitled to 20 times the wager placed in the BONUS area 52, and each other player wagering on BONUS play is also entitled to a payout equal to the wager amount on each such player's BONUS area 52. This, of course, is in addition to any payout attributable to the underlying game itself (e.g., blackjack). For example, a player may initially draw two 7s, and decide to draw an additional card, receiving a third 7, in which case he is entitled to a bonus payout of 500 to 1. Additionally, each other player betting on BONUS play is entitled to bonus payout equal to 25 times the wager amount on each such player's BONUS area 52. The player may elect to draw a fourth card in the hopes of drawing a fourth 7 for a 20,000 to 1 payout for himself and a 1000 to 1 payout for each other player betting on BONUS play. And, if the hand of four 7's was dealt in a predetermined sequence of suits, the player would be entitled to one million to one payout for himself, and a 10,000 to 1 payout for each other player betting on BONUS play. Of course, it should be noted that other cards can be used instead of 7s, i.e., any combination of three cards can be used instead of 7s, that tally to 21 and a fourth card to attain odds necessary for large payouts (i.e., 6-7-8 and 9). In addition, multi-deck games, particular suits (and sequences) could be utilized as well, such as multiple 7s in one suit (e.g., spades) to attain higher odds and payouts. Also, it should be noted that payouts to other players betting on BONUS play in amounts, or at all, may be determined at the election of the casino hosting the game.

Alternatively, the host casino may establish rules requiring that if the player is dealt 2 sevens in the originally dealt two cards, and takes a hit, receiving a third 7

entitling him to a payout of 500 times the wager in the BONUS area 52 for that player), the player may win over the dealer in the blackjack game and may also take a chance in BONUS play at receiving a 4th seven. Thus, he may take another hit to see if he gets 4 sevens, in which case the payout would be 20,000 times the wager placed in the BONUS area 52. Additionally, any combination of cards, suits, sequences of cards, or number of consecutively winning hands may be utilized for creating and awarding BONUS play. And, such BONUS play and awards may be facilitated by, but not constrained to, operation of the game table and table top display according to the present invention.

Therefore, the gaming apparatus and method of the present invention greatly facilitate casino game play under real-time interactive control of a live dealer. Computer-controlled display of gaming images in response to touch-sensitive inputs provided by dealer and players thus implement progress of game play through all phases of gaming and wagering, and greatly reduce opportunities for cheating.

Claims:

1. Gaming apparatus for interactive live table game play among participants, the apparatus comprising:

a display screen forming an upper member of a game table for displaying a playing surface; and

an image generator associated with the display screen for controlling display of selected game images for display on the playing surface of the display screen at plural participant positions thereon.

2. Gaming apparatus as in claim 1 in which the display screen includes a matrix of a plural number of individual display elements assembled in contiguous array.

3. Gaming apparatus as in claim 2 in which the individual display elements are cathode-ray tube display devices.

4. Gaming apparatus as in claim 2 in which the individual display elements are liquid-crystal display elements.

5. Gaming apparatus as in claim 1 in which the image generator includes an optical projector disposed to project the game images onto a surface of the display

screen opposite the playing surface for viewing the game images on the playing surface.

6. Gaming apparatus as in claim 1 in which the image generator comprises:

a processor for creating game images including input images for display at a selected number of the plural participant positions on the playing surface of the display screen.

7. Gaming apparatus as in claim 6 in which the game images include:

at least two participant positions that each include wager locations and game play card locations whereat playing card representations and recognition of wager are displayable for viewing on the playing surface.

8. Gaming apparatus as in claim 7 including:

a dealer participant position that includes card representations displayable for viewing on the playing surface for each player participant.

9. Gaming apparatus as in claim 7 in which the playing surface is touch responsive at selected locations including at locations at which input images are displayed.

10. Gaming apparatus as in claim 7, wherein locations at which playing card representations are displayed for viewing at a participant position are touch responsive locations.

11. Gaming apparatus as in claim 6 wherein the image generator is responsive to activation of touch sensitive locations of the display screen at which playing card representations are displayed as game images for altering the display of the card representations at the activated touch sensitive location to display a card value.

12. Gaming apparatus as in claim 1 including:

a surface layer overlaying the playing surface for viewing therethrough the game images displayed on the playing surface.

13. Gaming apparatus as in claim 1 wherein the playing surface suppresses glare and reflections.

14. A method of providing a bonus component to a card-based casino game involving one or more players, the casino game being of the type in which card are dealt to each of the one or more players and additional cards are dealt upon request, the method comprising:

indicating participation in the casino game with a first wager;

indicating participation in the bonus component with a second wager;

dealing cards to each of one or more participating players pursuant to the casino game; and

awarding bonus payout to one of the one or more players receiving cards pursuant to the casino game having card values including one or more of:

a) a card of predetermined card value as one of the first two cards received by the one player; or

b) two cards of predetermined card values as the first two cards received by the one player; or

c) three cards of predetermined card values as the first three cards received by the one player; or

d) four cards of predetermined card values as the first four cards received by the one player.

15. The method according to claim 14 in which all of the predetermined card values are 7's.

16. The method according to claim 14 including:

awarding bonus payment to the one player receiving

e) four cards of predetermined card values in a predetermined sequence of suits as the first four cards are received in succession by the one player.

17. The method according to claim 14 including:

awarding bonus payout to other of the players who indicated participation in the bonus component with a second wager, in response to the one player receiving card values including one or more of b), or c), or d).

18. The method according to claim 16 including:

awarding bonus payment to other of the players who indicated participation in the bonus component with a second wager, in response to the one player receiving card values including b), or c), or d), or e).

19. The method according to claim 18 in which all of the predetermined card values are 7's.

20. A method for interactive game play among a plurality of participants using a gaming table that exhibits at selected locations on a playing surface thereof computer controlled and generated images including playing card representations, and that includes computer controls at the selected locations, the method comprising:

initiating computer-controlled game play among the participants under control of one of the participants at one of the selected location;

actuating computer-controller display of initial playing card representations at a number of the selected locations at which game play participants are positioned; and

selectively, under control of the one participant and at the request of another of the participants, actuating computer-controlled display of an additional playing card representation at a location corresponding to the other participant.

21. The method according to claim 20 comprising:

selectively altering the computer-controlled display of a playing card representation between face down and at least partial face up orientations at a location corresponding to a participant in response to actuation by that participant of a computer control at the corresponding location.

22. The method according to claim 21 in which touch sensitive controls are disposed at locations at which playing card representations are displayed, and the actuation by the participant includes touching the playing surface of the table at a touch sensitive location corresponding to a displayed playing card representation.

23. The method according to claim 22 in which at least a corner portion of a playing card representation displayed in face down orientation at a selected location corresponding to a participant is displayed in curled-up orientation sufficient to exhibit card value and suit of the playing card representation in response to the participant's touch of the touch sensitive location.

24. The method according to claim 22 in which a playing card representation displayed in face down orientation at a selected location corresponding to a participant is displayed in face up orientation in response to the participant's touch of the touch-sensitive location.

25. Gaming apparatus for interactive game play among participants, the apparatus comprising:

a display screen forming an upper member of a game table for displaying a playing surface including participant positions disposed thereabout;

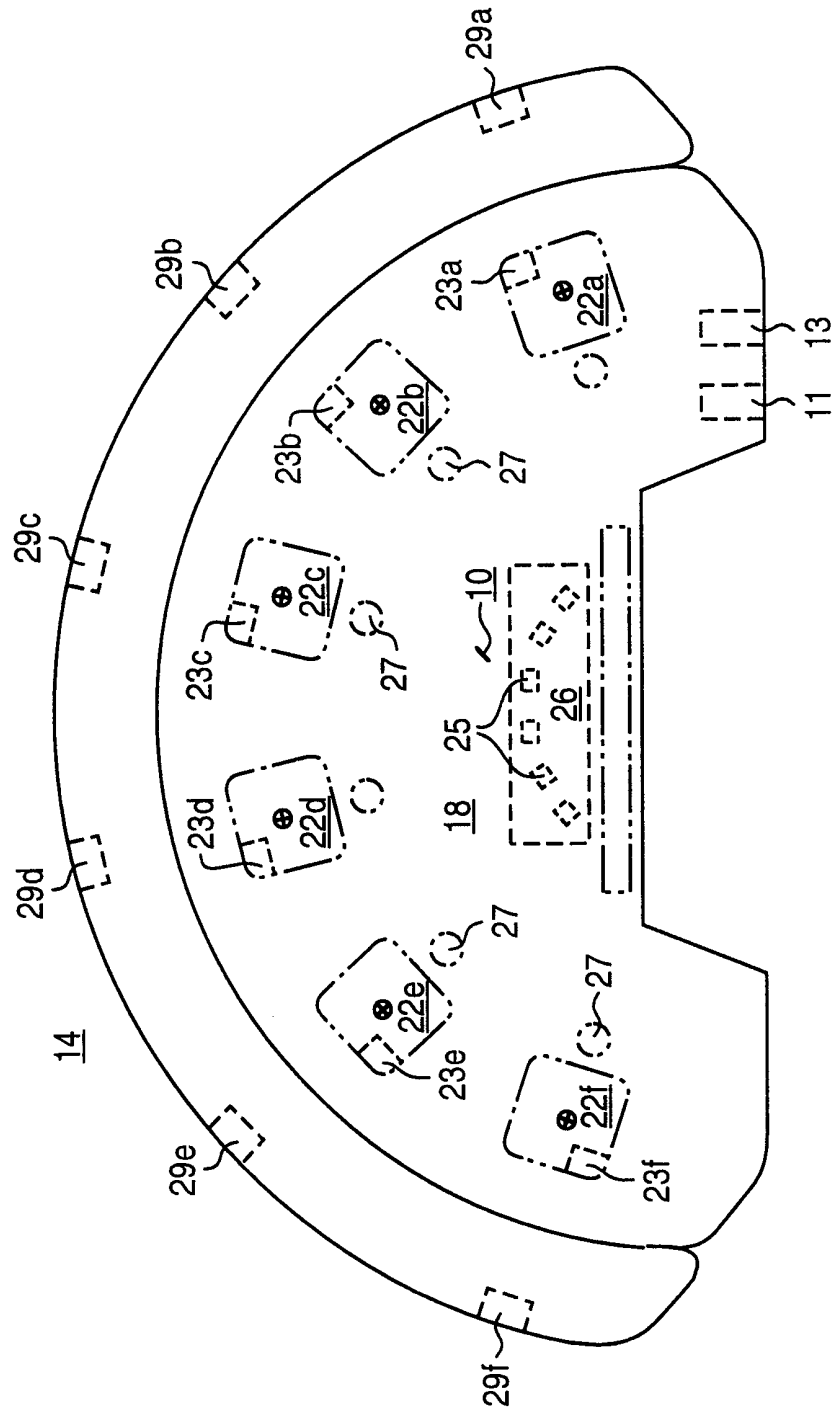
an image generator associated with the display screen for controlling display of selected game images including a wager representation for display on the playing surface of the display screen; and

a sensor on the playing surface in a wager area at at least one participant position, and coupled to the image generator for detecting placement of a wager on the wager area for activating the image generator to display on the playing surface a recognition of a wager placed in the wager area.

26. Gaming apparatus as in claim 25 in which the image generator forms the display on the playing surface of the recognition of a wager at the one participant position and at another location on the playing surface.

27. Gaming apparatus as in claim 25 including an auxiliary sensor in an auxiliary wager area disposed relative to the playing surface at at least the one participant position, coupled to the image generator for detecting placement of a bonus wager in the auxiliary wager area for activating the image generator to display on the playing surface a recognition of the bonus wager placed in the auxiliary wager area.

FIG. 1


29a
29b
29c
29d
29e
29f
14
23a
22a
23b
22b
23c
22c
23d
22d
23e
22e
23f
22f
27
10
25
26
18
11
13

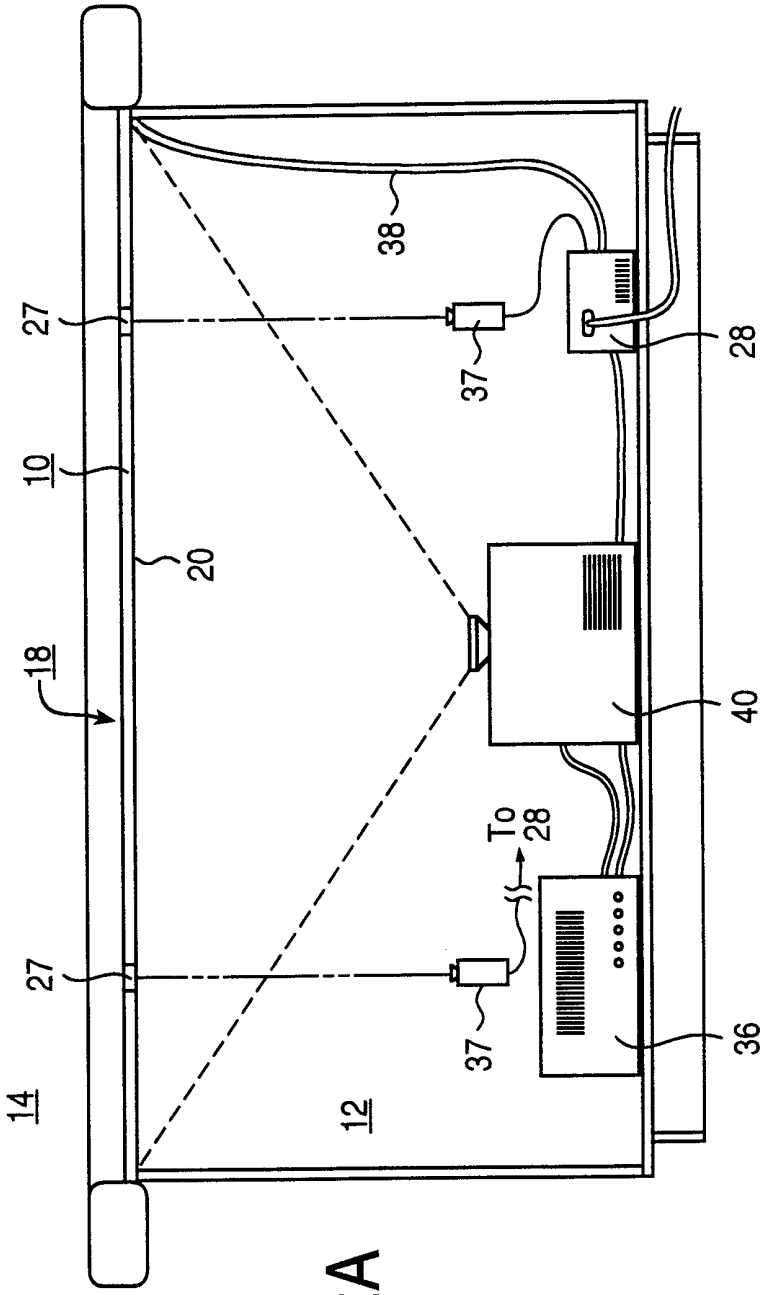


FIG. 2A

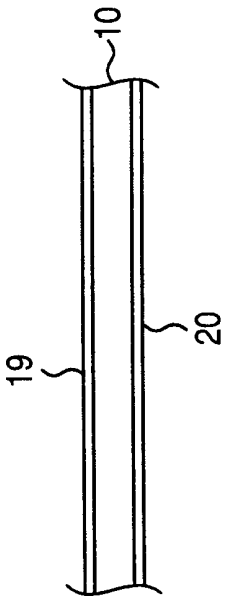


FIG. 2B

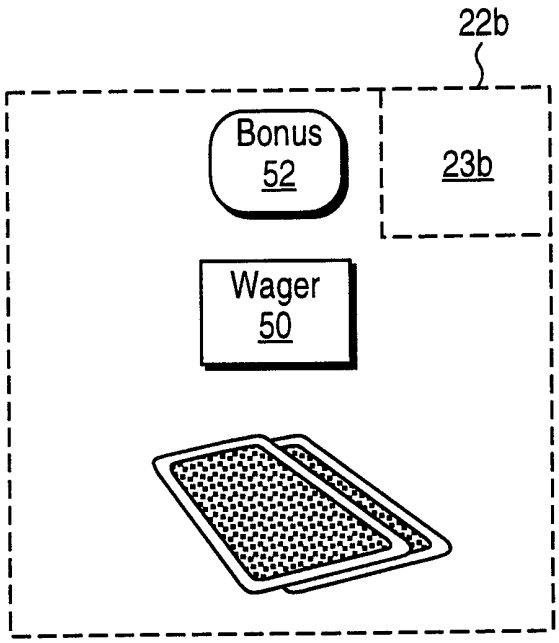


FIG. 3A

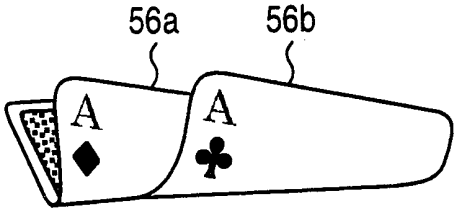


FIG. 3B

FIG. 3C

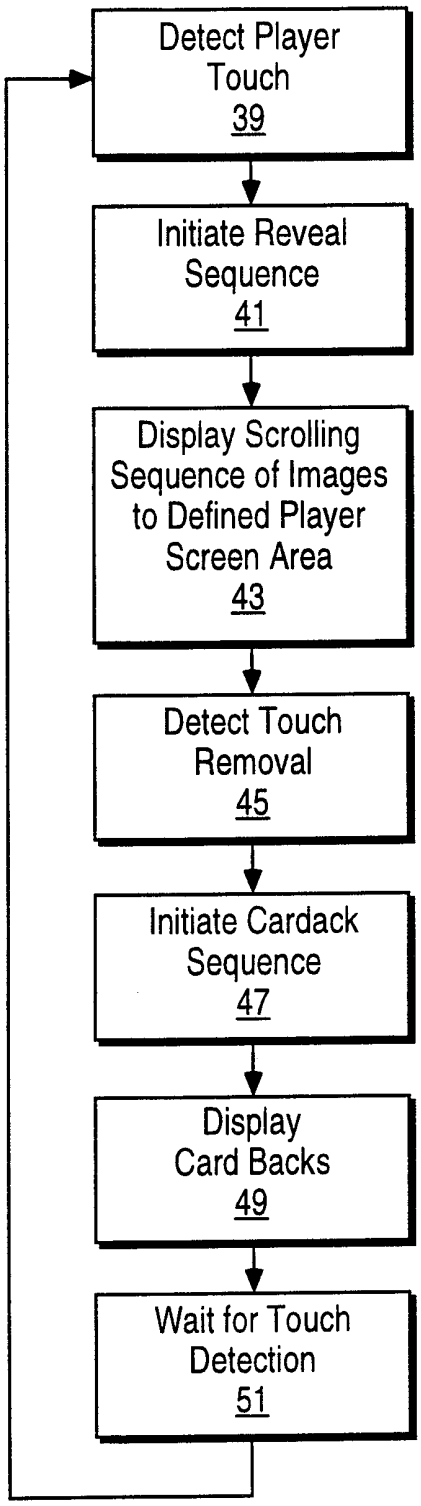
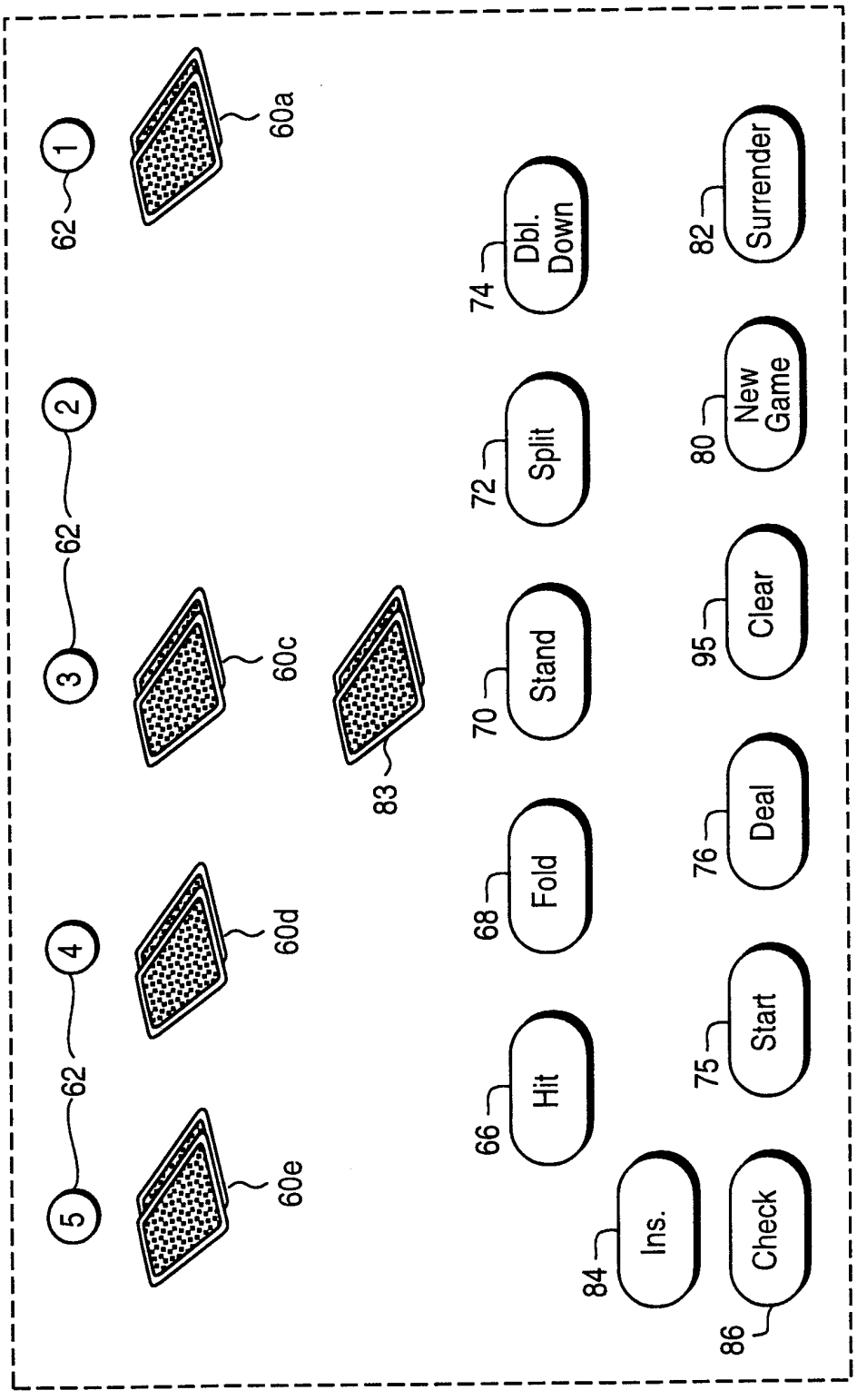

Detect Player Touch 39
Initiate Reveal Sequence 41
Display Scrolling Sequence of Images to Defined Player Screen Area 43
Detect Touch Removal 45
Initiate Cardack Sequence 47
Display Card Backs 49
Wait for Touch Detection 51

FIG. 4A


1
2
3
4
5
62
60a
60c
60d
60e
83
66 Hit
68 Fold
70 Stand
72 Split
74 Dbl. Down
75 Start
76 Deal
80 New Game
82 Surrender
84 Ins.
86 Check
95 Clear

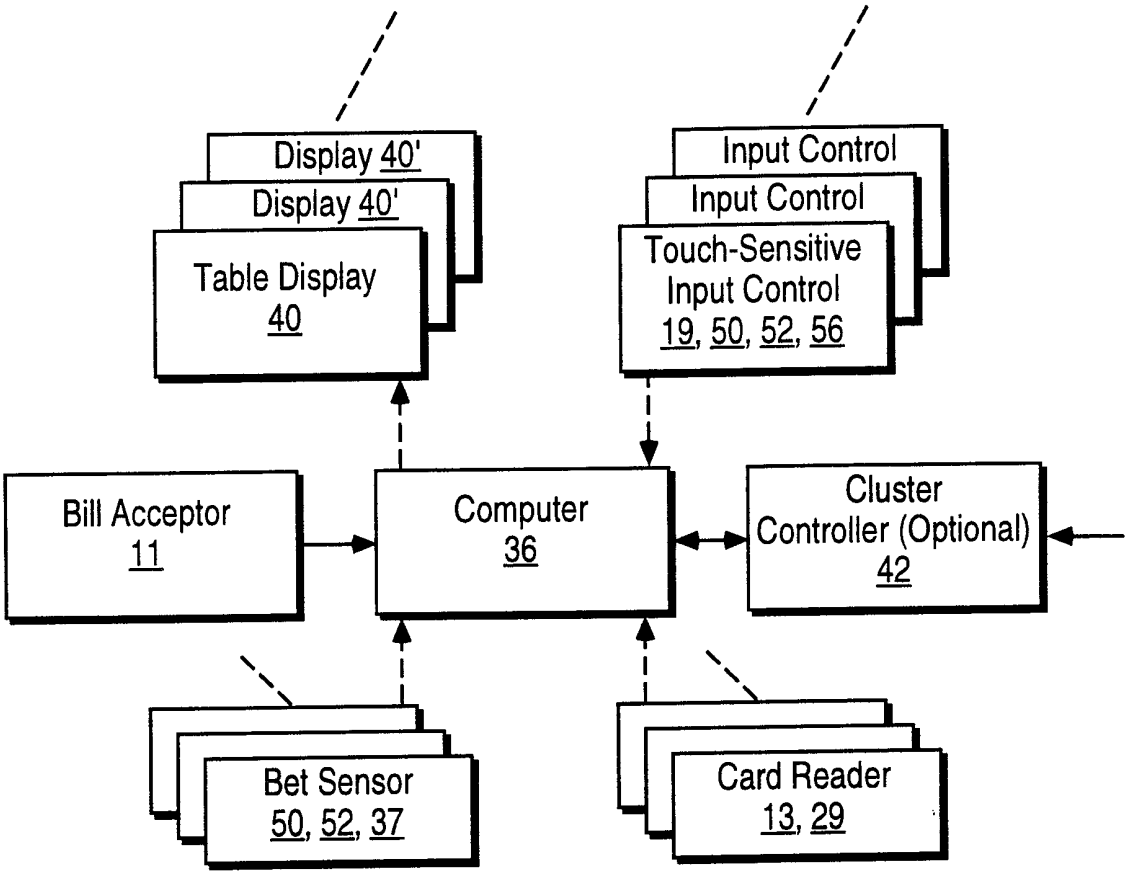

Display 40'
Display 40'
Table Display
40
Input Control
Input Control
Touch-Sensitive
Input Control
19, 50, 52, 56
Bill Acceptor
11
Computer
36
Cluster
Controller (Optional)
42
Bet Sensor
50, 52, 37
Card Reader
13, 29

FIG. 4B

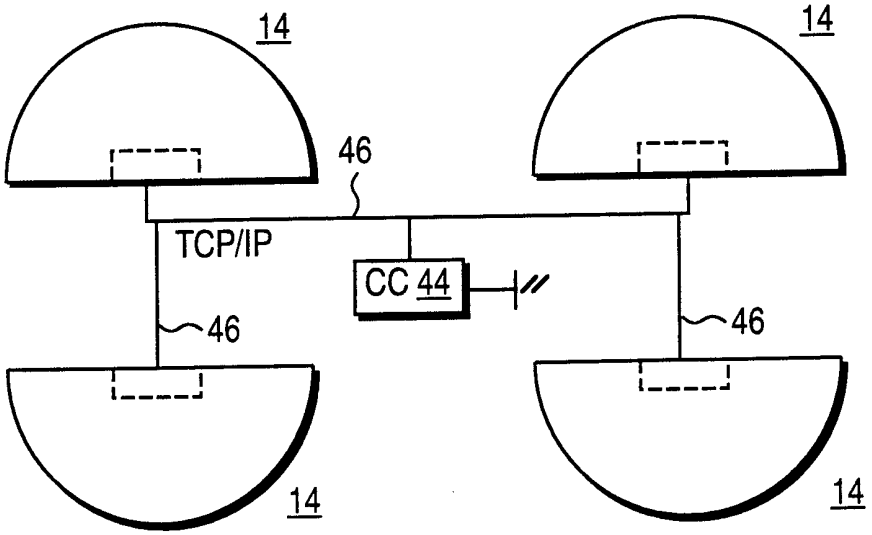

14
14
46
TCP/IP
CC 44
46
46
14
14

FIG. 4C

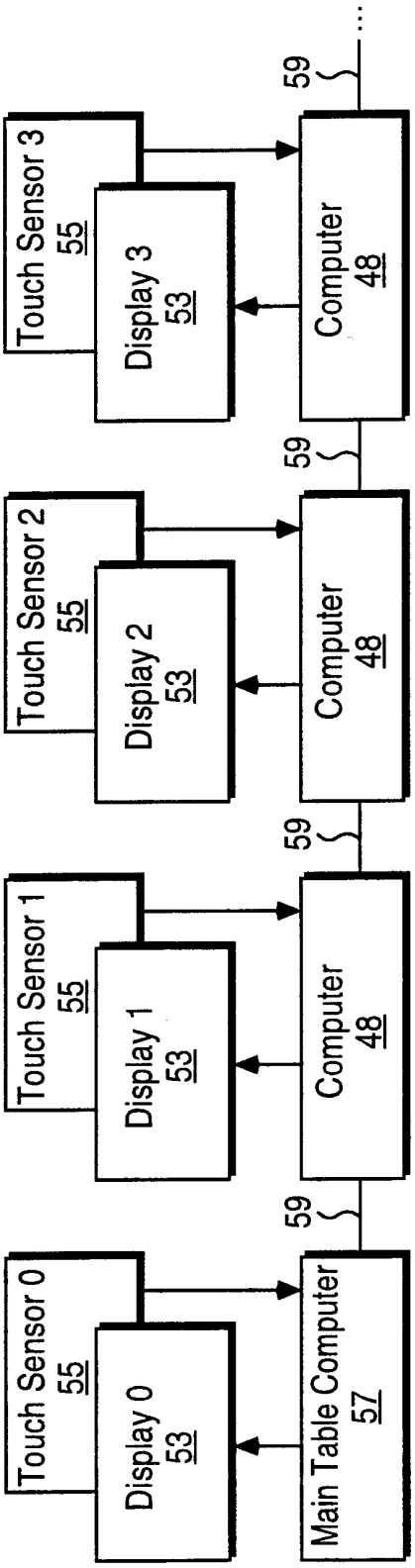
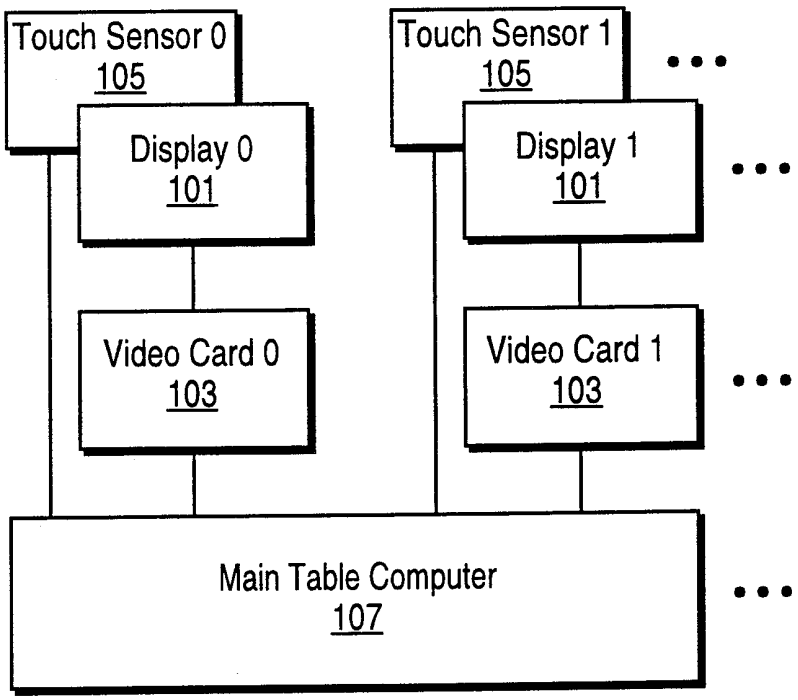

Touch Sensor 0
55
Display 0
53
Main Table Computer
57
59
Touch Sensor 1
55
Display 1
53
Computer
48
59
Touch Sensor 2
55
Display 2
53
Computer
48
59
Touch Sensor 3
55
Display 3
53
Computer
48
59

FIG. 4D

FIG. 4E


Touch Sensor 0
105
Touch Sensor 1
105
Display 0
101
Display 1
101
Video Card 0
103
Video Card 1
103
Main Table Computer
107

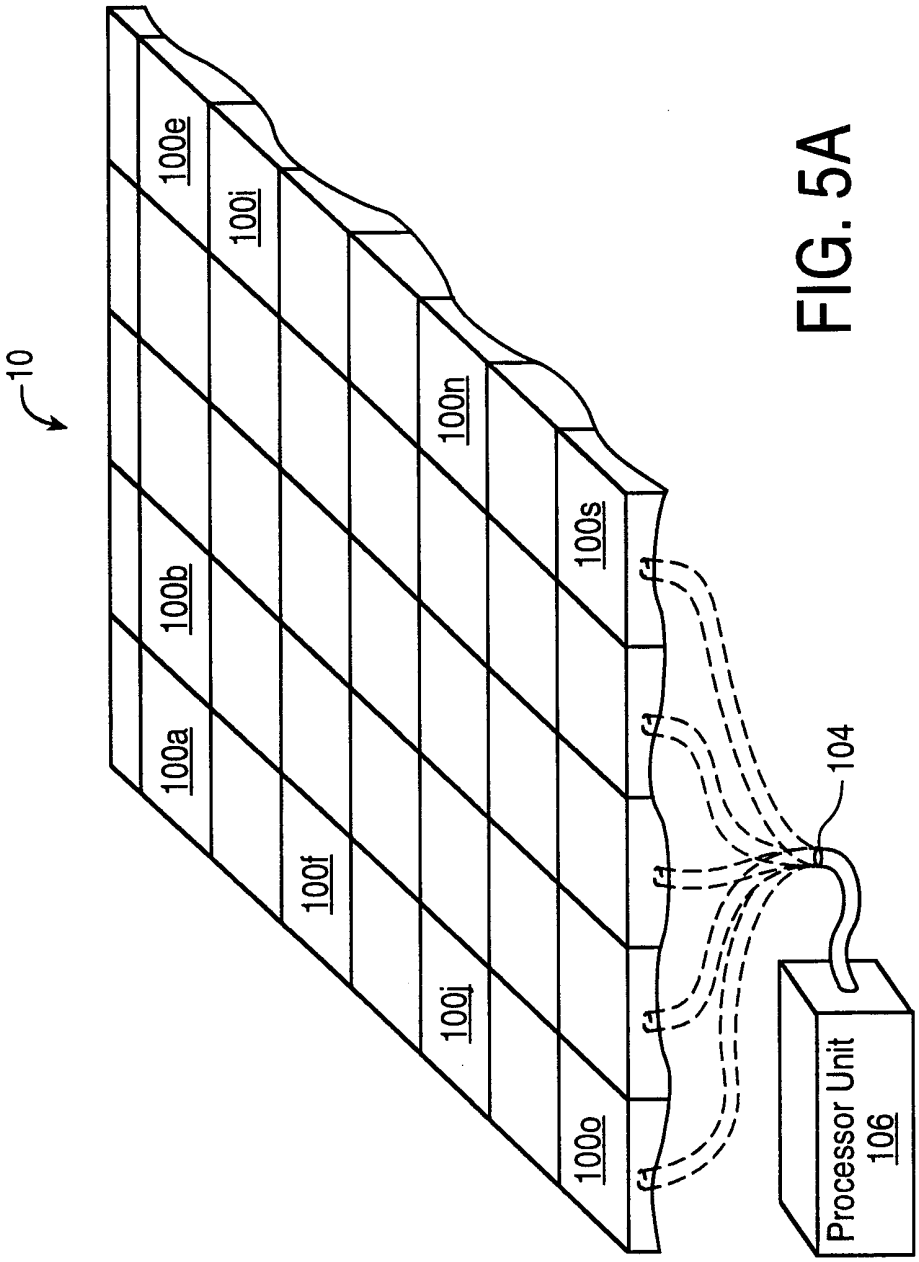

10
100a
100b
100e
100f
100i
100j
100n
100o
100s
104
Processor Unit
106

FIG. 5A

FIG. 5B

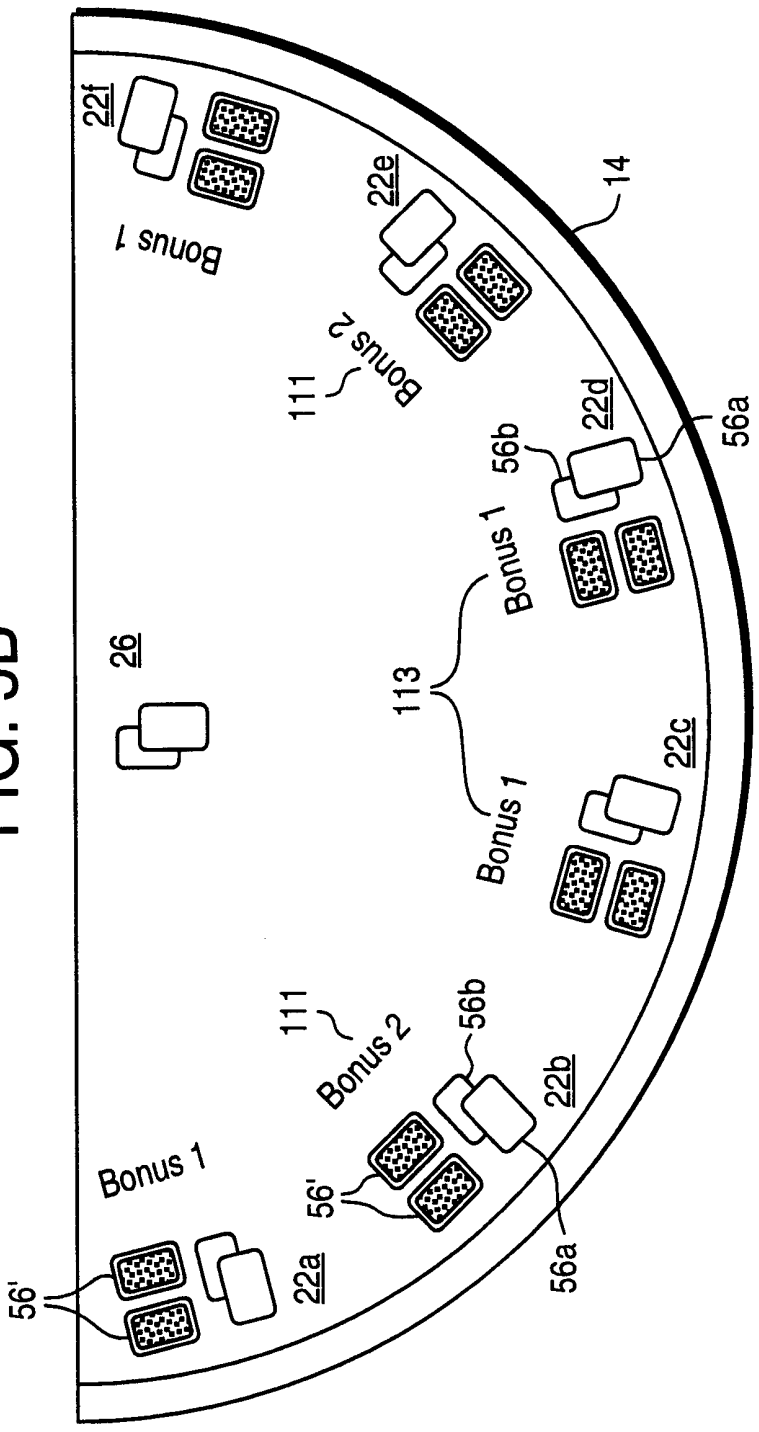

22f
Bonus 1
22e
Bonus 2
111
14
56b
22d
56a
Bonus 1
26
113
Bonus 1
22c
111
Bonus 2
56b
22b
Bonus 1
56'
56a
56'
22a

FIG. 6A

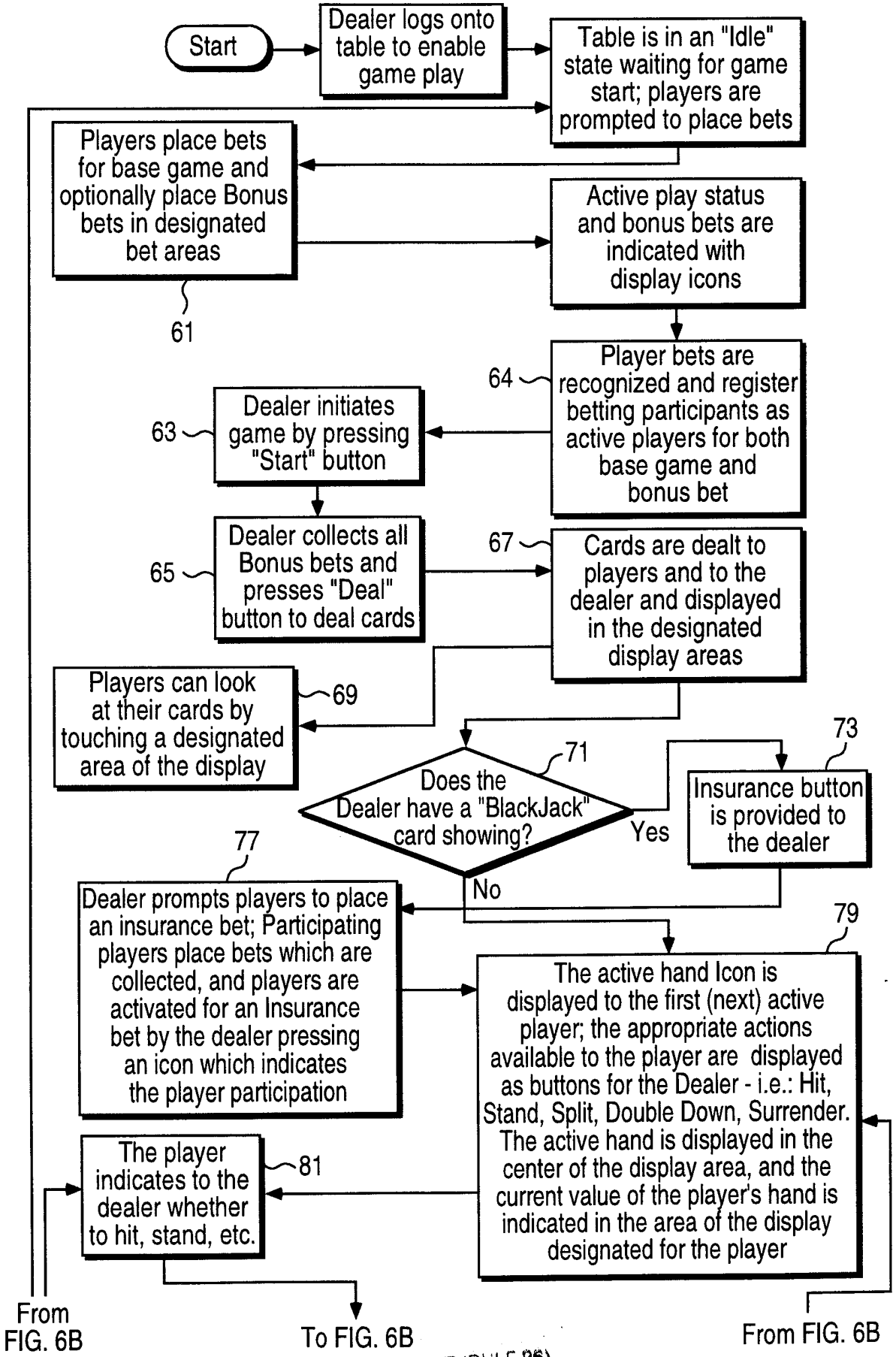
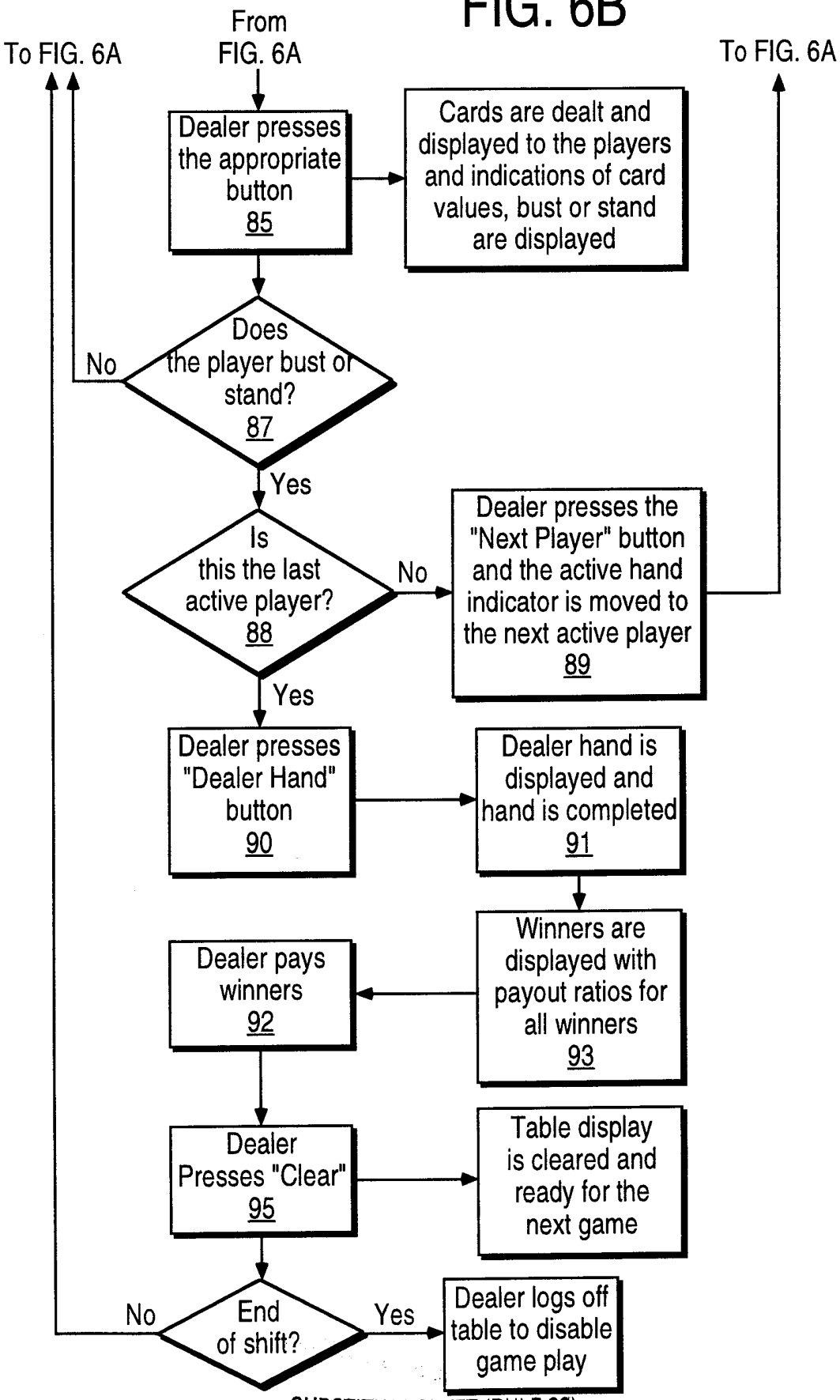

Start
Dealer logs onto table to enable game play
Table is in an "Idle" state waiting for game start; players are prompted to place bets
Players place bets for base game and optionally place Bonus bets in designated bet areas
61
Active play status and bonus bets are indicated with display icons
64
Player bets are recognized and register betting participants as active players for both base game and bonus bet
63
Dealer initiates game by pressing "Start" button
65
Dealer collects all Bonus bets and presses "Deal" button to deal cards
67
Cards are dealt to players and to the dealer and displayed in the designated display areas
Players can look at their cards by touching a designated area of the display
69
71
Does the Dealer have a "BlackJack" card showing?
Yes
73
Insurance button is provided to the dealer
No
77
Dealer prompts players to place an insurance bet; Participating players place bets which are collected, and players are activated for an Insurance bet by the dealer pressing an icon which indicates the player participation
79
The active hand Icon is displayed to the first (next) active player; the appropriate actions available to the player are displayed as buttons for the Dealer - i.e.: Hit, Stand, Split, Double Down, Surrender. The active hand is displayed in the center of the display area, and the current value of the player's hand is indicated in the area of the display designated for the player
The player indicates to the dealer whether to hit, stand, etc.
81
From FIG. 6B
To FIG. 6B
From FIG. 6B

FIG. 6B


From FIG. 6A
To FIG. 6A
To FIG. 6A
Dealer presses the appropriate button 85
Cards are dealt and displayed to the players and indications of card values, bust or stand are displayed
Does the player bust or stand? 87
No
Yes
Is this the last active player? 88
No
Dealer presses the "Next Player" button and the active hand indicator is moved to the next active player 89
Yes
Dealer presses "Dealer Hand" button 90
Dealer hand is displayed and hand is completed 91
Winners are displayed with payout ratios for all winners 93
Dealer pays winners 92
Dealer Presses "Clear" 95
Table display is cleared and ready for the next game
End of shift?
No
Yes
Dealer logs off table to disable game play

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/20737

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :A63F 1/00, 1/06, 9/22
US CL :463/12-13, 30; 273/237, 292, 309
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 463/1, 11-13, 16-20, 25, 29-31, 36-37, 40-42; 273/139, 138.1, 138.2, 237, 292, 309, 459-461

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

NONE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,356,140 A (DABROWSKI et al) 18 October 1994, See entire document.	1-13 and 20-27

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 14 OCTOBER 1999	Date of mailing of the international search report 17 NOV 1999
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer M. SAGER Telephone No. (703) 308-2217

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Form PCT/ISA/210 (second sheet)(July 1992)*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/20737

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Please See Extra Sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-13 and 20-27

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/20737

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING
This ISA found multiple inventions as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Group I, claim(s) 1-13 and 20-27, drawn to a gaming apparatus and method for interactive play.
Group II, claim(s) 14-19, drawn to method of providing a bonus component to a card game.

The inventions listed as Groups I and II do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical features of the Group I invention is the particular display screen for displaying of a playing surface and image generator for generating the image of the playing surface and playing cards claimed therein, while the special technical feature of the Group II invention is particular steps for a bonus or auxilliary game componnet claimed therein. Since the special technical features of the Group I invention is not present in the Group II claims and the special technical features of the Group II invention is not present in the Group I claims, unity of invention is lacking.