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(54) **A METHOD FOR A GAMING SYSTEM**

(57) The present disclosure relates to a computer implemented method performed by a gaming system. In particular, the present disclosure relates to a scheme for further improving a randomness in a game provided

by means of the gaming system. The present disclosure also relates to a corresponding gaming system and a computer program product.

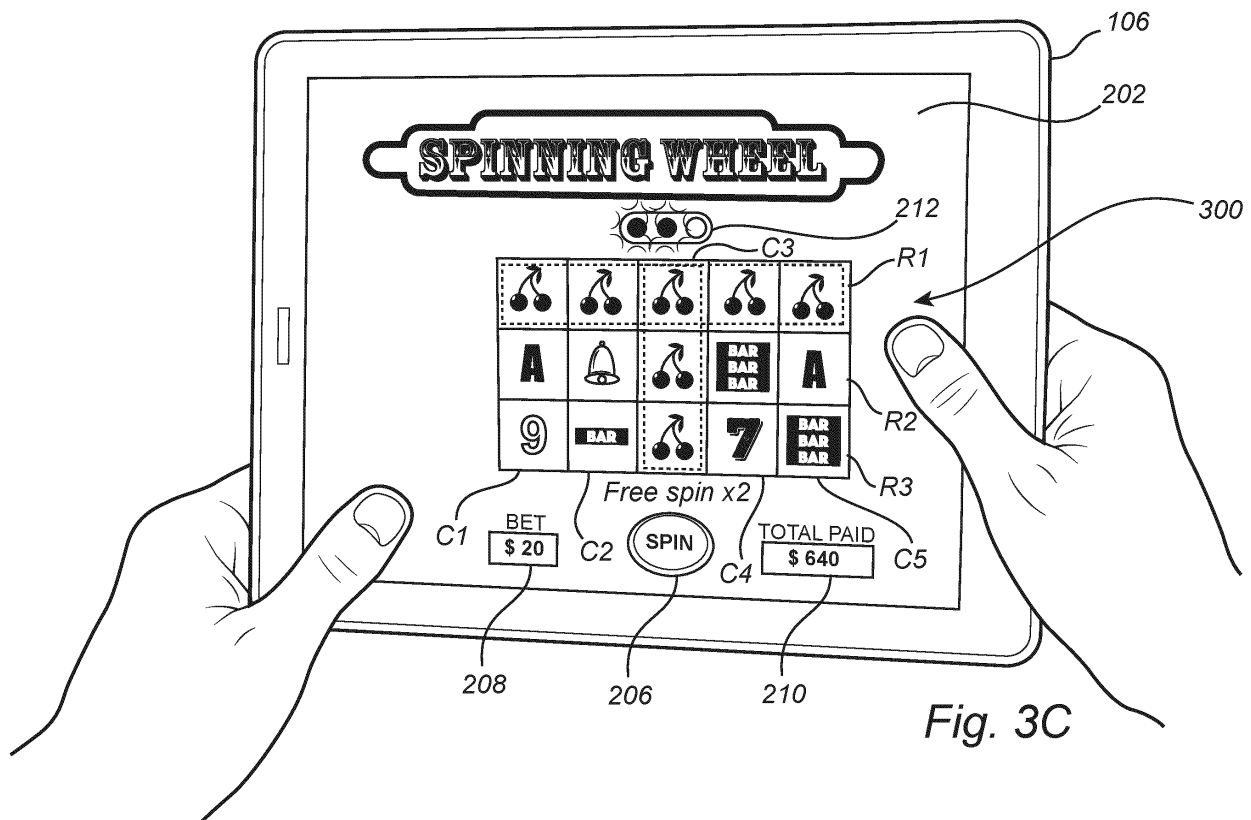


Fig. 3C

Description

TECHNICAL FIELD

[0001] The present disclosure relates to a computer implemented method performed by a gaming system. In particular, the present disclosure relates to a scheme for further improving a randomness in a game provided by means of the gaming system. The present disclosure also relates to a corresponding gaming system and to a computer program product.

BACKGROUND

[0002] Games of chance, particularly in the form of online gaming, have become a widely recognized form of entertainment. The sustained success of the gaming industry is heavily reliant on its ability to innovate, introducing novel games and gaming concepts that captivate the gaming audience. This innovative drive is notably evidenced by the industry's adaptation to the digital era, with the Internet and online gaming platforms spearheading a new era of game accessibility and diversity.

[0003] In the online gaming realm, it is a continual pursuit to engage both new and existing players through inventive means, ensuring that they are drawn to, and retained by, the gaming operator's site. One such method involves the introduction of unexpected game scenarios, which hold the potential to both intrigue and motivate players. The allure of these scenarios lies in their ability to emerge unexpectedly, thereby heightening the gaming experience with the prospect of novel and unforeseen outcomes.

[0004] Introducing these elements of surprise within the game can further have the beneficial side effect of increasing the player's potential payout. Such scenarios can augment the value of a player's bet, providing an additional layer of excitement. However, this potential for increased payouts must be carefully regulated by the gaming operator to ensure that the payouts remain within manageable limits. There exists, therefore, a continuous need to balance the game's appeal, via the potential for enhanced payouts, with the imperative for the operator to maintain comprehensive control over the game's operational parameters.

SUMMARY

[0005] According to an aspect of the present disclosure, the above is at least partly met by a computer implemented method performed by a gaming system, the gaming system comprising a server arranged in communication with an electronic user device using a network connection, the electronic user device comprising a display screen, wherein the method comprises the steps of receiving, at the server, a request from the electronic user device to play a game provided by the server, the game including a plurality of different gaming

modes, forming, at the server, a table in the form of a grid having a selected dimension and comprising a selected number of cells, generating, at the server, a set of elements corresponding to the selected number of cells, wherein the set of elements are selected from a group of predefined element types, and the selection of the set of elements is dependent on a present gaming mode of the plurality of different gaming modes, populating, at the server, the cells of the table with the set of elements, directing, using the server, the electronic user device to display the table at the display screen, providing, using the server, a set of game visuals to the electronic user device to enable a player to interact with the game, receiving, at the server, a player interaction from the electronic user device as a response to the set of game visuals, determining, at the server, a gaming outcome by applying a matching scheme adapted to match adjacently arranged cells within the table with one of a plurality of predefined element formations stored at the server, wherein the matching scheme applied for determining the gaming outcome is dependent on the present gaming mode, and selecting, at the server, another gaming mode of the plurality of different gaming modes based on the gaming outcome and the received player interaction.

[0006] In accordance with the present disclosure, the gaming interaction primarily involves a digital representation of a table displayed on the user's device, structured as a grid composed of multiple cells in an organized layout of rows and columns. Each cell is filled with an element, which could range from various symbols to numerical figures, each selected to align with the specific characteristics and rules of the game at hand. For example, where the game is defined as a virtual slot game, it is presented on a screen with virtual elements that simulate the experience of traditional slot machines without the need for physical components.

[0007] Moreover, the gaming experience is divided into distinct gaming modes, each gaming mode presenting its own set of challenges and potential outcomes. A player operating his electronic user device is enabled to progress through these gaming modes sequentially, with the progression designed to introduce increased chances of winning.

[0008] To achieve controlled variability, the present system may in some embodiments enable the server to dynamically adjust gameplay based on the specific gaming mode currently active. By configuring the set of elements and the matching scheme to align with the mode, the server systematically introduces an increase adaptability in randomization, adjusting the odds and potential outcomes according to each stage of progression. Such an adaptability ensures that while randomness remains integral to each gaming round, players also encounter a level of predictability within each mode, heightening both engagement and strategic decision-making. As players transition through modes based on prior gaming outcomes and user interactions, the gaming

experience becomes a balance between chance and skill, fostering a layered progression that can keep players engaged for longer sessions without sacrificing gameplay integrity.

[0009] Generally, when the operational scheme according to the present disclosure is applied to a game concept provided by the server, it may be possible to increase the randomization of the game, thus potentially allowing for increasing winning possibilities for a player participating in the game. An advantage following such a possibility is an improved attraction power to the game, thus potentially allowing for the player to remain playing the game for an increased duration as compared to previously known similar operational schemes. This could potentially be beneficial to both the player participating in the game and the gaming operator providing the game. Additionally, allowing for an increased randomization of the game may potentially further increase the security of the game, since known general computer-based issues relating to the generation of randomized material to the game are minimized.

[0010] Furthermore, the operational scheme according to the present disclosure uniquely capitalizes on server-side computational resources to handle both data processing and bandwidth optimization. By streamlining the server algorithms, the system not only reduces computational overhead but also improves the use of network bandwidth. The processed game data is then efficiently transmitted to the electronic user device, ensuring a fluid and seamless gaming experience. This amalgamation of computational efficiency and bandwidth optimization serves a dual purpose: it expedites the gaming process for players while also conserving valuable server resources. Consequently, the system can accommodate a greater number of players without compromising on performance, potentially enhancing both the user experience and the game operator's revenue streams.

[0011] The gaming system may in some embodiments employ a multi-level data compression technique on the server to minimize the volume of data transmitted to each electronic user device. The server in such embodiments prioritizes critical game state information and visual updates, reducing non-essential elements or repetitive game data wherever possible. The suggested compression mechanism not only conserves bandwidth but also enables faster delivery of relevant data to the client devices, ensuring that high-priority information is promptly available on the user's display screen. By compressing outgoing data streams based on the game state and the interaction level, the server enables optimal network use without impacting the graphical quality or responsiveness on the electronic user devices, thus enhancing the overall gaming experience while maintaining server and network efficiency.

[0012] With increasing gaming modes, it is necessary to ensure that the computational resources of the server operating the game is distributed as relevant as possible. The present disclosure therefore implements a matching

scheme for determining the gaming outcome that is dependent on the present gaming mode. The matching scheme is in turn used by the server to match adjacently arranged cells within the table with one of a plurality of predefined element formations stored at the server. Consequently, rather than using exactly the same matching scheme throughout the game and for all of the different gaming modes, the present disclosure adapts the matching scheme dependent on the present gaming mode and may as such direct more of the computational resources of the server for the in comparison "advanced gaming modes" as compared to the "initial gaming modes".

[0013] Furthermore, it will by means of the present disclosure be possible to implement complex element types which additionally improves the randomization of the game as compared to prior-art solutions, while still ensuring that the computational burden at the server is limited and reduced (as compared to what would be needed in case of applying prior-art randomization techniques commonly used in relation to online gaming).

[0014] For ensuring that the determination of the gaming outcome is performed with a minimum amount of perceived delay in the progression of the game it is desirable to apply a computational efficient matching scheme. Possible schemes that can be used in relation to the present disclosure include different forms of so-called graph-based image processing methods that today find usage within e.g. the computer vision field. It should be understood that the matching scheme may be differently configured for each gaming mode to achieve the desired effects of varying amounts of computational resources for the different gaming modes. Accordingly, the overall matching scheme may be the same for each gaming mode, but specifically targeted for each of the different gaming modes.

[0015] The definition of "adjacently" as used above may be dependent on the specific implementation of the present scheme. For example, adjacently may be defined as arranged on the same row of the table or in the same column of the table. It may however also be possible to allow other element formations to be seen as adjacently, such for example comprising a combination of cells arranged both on different columns and on different rows, but at least sharing a side of a cell to another cell holding a matching element. Other definitions of element formations comprising matching elements are of course possible and within the scope of the present disclosure. Such a further example of an element formation may be where matching elements form specific "shapes", but not necessarily share a cell side with each other. Thus, two adjacent cells may possibly, in some embodiments, be seen as two cells at least having "touching" cell corners.

[0016] Generally, the cells of the table include four sides, formed as rectangles. However, the cells of the table may have any number of sides from three and upwards. Accordingly, the cells may be shaped as triangles, rectangles/squares, octagons, etc. It could also be possible to combine differently shaped cells in the same

table.

[0017] As indicated above, the table is populated with a different element, where the elements are selected from a group of predefined element types. The group of predefined element types may in some embodiments comprise the generic element types that are common to slot games, etc., for example including "bar" symbols or elements from a deck of cards. Other element types, possibly specific for the game, are of course possible and within the scope of the present disclosure. The type of elements may also include at least one generic element type, in some embodiments defined as a wild card or a joker element, that may be matchable to all of the plurality of predefined element types. As such, the generic element type may be equally matchable with e.g. a number as well as a symbol.

[0018] In a possible embodiment, the table is graphically visualized as a plurality of parallel reels. This visualization exploits the visual dynamics of spinning reels, pivotal in generating excitement and anticipation. Each reel's spin harbors the potential for winning combinations, the activation of bonus gaming modes, and the initiation of novel game gaming modes, thus maintaining gameplay that is visually engaging and emotionally stimulating for the player.

[0019] Additionally, representing the table in this manner is particularly advantageous for game developers and operators. It provides a standardized visual framework that can be easily customized, updated, and themed, allowing for the creation of diverse game offerings within the same structural paradigm. This flexibility in visual design, achieved without altering the core game mechanics, ensures that the gaming method retains its robustness and versatility for various game implementations.

[0020] In a further embodiment, at least a portion of the cells within the table is provisioned with an updated set of elements for each one of the first plurality of consecutive games. This iterative refreshment of elements serves to ensure a dynamic and unpredictable gaming environment, enhancing the player's engagement by presenting new potential combinations and outcomes with every game played.

[0021] Additionally, the process of updating the set of elements for each game introduces an element of variety that is crucial to maintaining a user's interest over prolonged gaming sessions. It effectively combats the monotony that can arise from repetitive gameplay, thereby sustaining the excitement and challenge intrinsic to the gaming experience. Furthermore, this feature allows for a strategic depth within the game, as the updated elements can be designed to interact with the game's progression and the player's achievements. This interaction not only reinforces the game's complexity but also allows for a tailored gaming experience, where the evolution of the game's landscape mirrors the player's journey through the different gaming modes. It may also be possible to utilize the updating of elements as a means to

introduce special events or promotions within the game, providing an avenue for game operators to engage with players through time-limited opportunities or rewards.

[0022] Preferably, the gaming procedure further comprises a base game gaming mode, and wherein the gaming procedure is initiated at the base game gaming mode. The introduction of a base game gaming mode provides a structured progression system that enhances player engagement by setting clear milestones and objectives. It allows players to ease into the gaming environment, fostering a sense of accomplishment as they progress from the base gaming mode to higher tiers of gaming complexity. Additionally, starting the gaming procedure at the base gaming mode acts as an equalizer among players, ensuring that everyone begins their gaming experience with the same initial conditions. This not only promotes fairness but also heightens the competitive aspect of the game, as players strive to ascend from the base gaming mode to achieve higher statuses.

[0023] In a possible embodiment of the present disclosure, the first gaming mode comprises an adjustable number of free games. This particular feature serves to enhance the gaming experience by introducing an additional layer of excitement and reward. This flexibility of gaming modes not only adds a marketing edge but also serves as an incentive for players to commence and continue their interaction with the game.

[0024] It is also conceivable within the scope of this disclosure that the adjustable free games could be used strategically by the operator to introduce new players to the game or to reward loyalty among returning players.

[0025] Preferably, the adjustable number of free games is dependent on if a specific type of the predefined element types is identified from the set of elements within the table. For example, but not exclusively, the specific element type that activates the free games could be a unique symbol or a rare icon, woven seamlessly into the game's narrative. The player's discovery of this element type thus becomes a significant event within the gaming session, providing both a sense of achievement and the tangible benefit of additional gameplay without further wagering. It is also contemplated within this disclosure that the mechanism for triggering free games may be intricately linked with certain gaming outcomes, further aligning the game's reward system with the player's skill and persistence. This aligns the gaming experience with a sense of progression and achievement.

[0026] The first gaming mode may also include predefined prize element types which may be displayed within the GUI. The predefined prize element types are preferably categorized into varying prize categories, for example, mini, minor, major or mega and may also include multipliers, awards, physical prizes and monetary prizes, preferably monetary prizes. The collection of the predefined element types during the free games gaming mode may provide for the substitution of the predefined prize elements types provided at the beginning of the free games gaming mode with, in comparison, higher value

predefined prize element types i.e. lower value predefined prize element types are substituted by higher value predefined prize elements types as a result of the collection of predefined element types. An example may include the substitution of a x2 multiplier by a x3 multiplier or the substitution of a Euro 10 prize with a Euro 20 prize. Such substitution of the predefined prize element types is not dependent on a collation threshold of predefined prize element types being met but rather the duration of the free games gaming mode. In some embodiments the predefined prize elements will be locked during the first gaming mode and are only unlocked when the game progresses to the next gaming mode.

[0027] In a possible embodiment, the second gaming mode comprises a series of adjustable bonus rounds. Such a feature may possibly enrich the gaming narrative by providing a transition from the standard gameplay to a more rewarding phase. Bonus rounds serve as a critical junction, enhancing player engagement by offering unique challenges and rewards separate from the primary game structure. The delineation of the second gaming mode as a distinct phase with bonus rounds suggests a tiered gaming experience, where players can look forward to reaching a notable milestone that offers a differentiated gameplay experience.

[0028] Preferably, the adjustable number of bonus rounds is dependent on if a specific type of the predefined element types is identified from the set of elements within the table. For example, but not exclusively, the specific element type that represents a bonus prize or a cash prize.

[0029] Additionally, it may in some embodiments be desirable to expand the scheme according to the present disclosure to further comprise awarding a bonus, when operating the gaming procedure at the second gaming mode wherein, if a specific type of the predefined prize element types is identified from the set of elements within the table. Accordingly, these bonus rounds may be conditioned upon the identification of a specific type of predefined prize element within the table that matches the specific predefined prize element collected during the free spins gaming mode of the game. This conditional reward system underscores the game's strategic depth, as players are not only tasked with playing the game but also with seeking out specific elements that unlock additional value.

[0030] It is possible, and within the scope of the present disclosure, to allow a gaming mode of the bonus to be dependent on a number of the specific type of the predefined prize element types being identified from the set of elements within the table during the free games gaming mode. Thus, the bonus awarded is not static but varies according to the quantity of the specific predefined prize element type identified during a previous gaming mode. This feature introduces a variable reward mechanism, enhancing the game's dynamism. It encourages players to continue playing with the objective of maximizing their identification of the specific element type, there-

by potentially increasing their predefined prize element. This creates an incremental reward system that can sustain player interest over an extended period, as it provides a continuous incentive for skilled play.

[0031] Within the scope of the present disclosure, the specific type of the predefined element types remains within the table for a predetermined number of the consecutive games. This feature can significantly enhance the continuity of the gaming experience, ensuring that players have a sustained opportunity to capitalize on the presence of these elements. The enduring nature of the specific elements across multiple games adds a layer of strategic depth, as players may plan their moves in anticipation of these elements' effects in forthcoming rounds. Moreover, this aspect of the gaming method can heighten the suspense and excitement within the gameplay, as the persistent elements may become a cornerstone for achieving, in comparison, higher rewards or unlocking new gaming modes within the game.

[0032] In certain embodiments, the gaming system may further comprise a step of decreasing the gaming mode if the gaming status for the first gaming mode falls below a second predefined threshold, which is lower than the first predefined threshold. The introduction of this adaptive gaming mode mechanism allows for a responsive gaming environment that adjusts to the player's progress. This provides a balanced challenge, avoiding situations where the game may become overly difficult and potentially frustrating for the player. It also ensures that the gaming experience is tailored to maintain the player's engagement by adapting the difficulty to their current performance mode. This dynamic adjustment of the gaming mode can also be a tool for managing the player's sense of achievement, making the game approachable and rewarding for both novice and experienced players.

[0033] In some embodiments of the present disclosure the first game is a game of chance, such as for example a slot game, where the player is placing a bet to be allowed to participate in the game. The gaming outcome may in such an embodiment be dependent on the bet placed by the player.

[0034] As indicated above, the server is in charge of controlling the electronic user device to display the table as well as the gaming outcome at the display screen of the electronic user device. In some embodiments the electronic user device is adapted to present a graphical user interface (GUI) at the display screen. The server may in a corresponding manner be adapted to a graphical representation of at least one of the tables, the gaming outcome, and the updated table, to be distributed to the electronic user device, where the graphical representation is then presented within the GUI.

[0035] In addition to managing game state updates, the server typically functions as the control center for all player interactions and bet-related processes. Specifically, the server receives and processes each player's bet input, calculating potential gaming outcomes based

on the wagering parameters, predefined matching schemes, and applicable multipliers or odds values. By handling these calculations centrally, the server ensures that all bets, outcomes, and rewards are accurately aligned with the game's rules and odds. The client device receives only the resulting outcome and necessary visual updates, preserving both the integrity and fairness of the gaming process while minimizing the client's computational load. Such a centralized approach enables the operator to maintain robust control over game mechanics and regulatory compliance across multiple client devices and locations.

[0036] Such a GUI may also be arranged to allow the player to directly interact with the server, for example allowing the player to control his/her participation in the game as well as to control a size of the bet placed when participating in the game.

[0037] Within the context of the present disclosure the expression "forming a graphical representation" should be interpreted broadly. Specifically, it should be understood that the server in some embodiment may be configured to only form a collection of "meta-data" (here corresponding to the graphical representation) that will be rendered at the frontend, such as within the GUI of the electronic user device. However, in another embodiment it may be the other way around, meaning that the server will essentially form an image (here corresponding to the graphical representation) that then will be displayed within the GUI of the electronic user device. Further alternative implementations along the same mutations are possible and within the scope of the present disclosure. Additionally, it may also be possible to allow the graphical representation to be set differently for different game operators, players or groups of players. The graphical representation may also be dependent on e.g. the geographical location of the players, such as dependent on city, country or continent where the player is located/registered.

[0038] Within the context of the present disclosure, it should be understood that it in some embodiments so that it may be possible to allow the server to control if a specific electronic user device is to be allowed to apply the scheme according to the present disclosure. Such control may for example be dependent on a geographical location of the electronic user device. Possibly, the geographical location may be selected from a group comprising a city, a country and a continent.

[0039] According to another aspect of the present disclosure there is provided a gaming system adapted to execute a gaming procedure operated at each one of a plurality of different gaming modes, the plurality of different gaming modes including at least a first and a second gaming mode being different from each other, the gaming system comprising a server arranged in communication with an electronic user device using a network connection, the electronic user device comprising a display screen, wherein the server is adapted to operate, by the server, the gaming system to provide a first plurality

of consecutive games at the first gaming mode, including form a graphical gaming area to be displayed at the display screen of the electronic user device, the graphical gaming area comprising a first portion defining a table comprising a predetermined number of cells, generate a set of elements corresponding to the cells of the table, each generated element being one of a plurality of predefined element types, populate the cells of the table with the set of elements, control the electronic user device to display the table at the display screen, match adjacently arranged elements within the cells of the table with one of a plurality of predefined element formations stored at the server, determine a first gaming outcome if the matching results in a successful element matching, increase a current gaming status for the first gaming mode if the matching results in a successful element matching, and transition the gaming system to the second gaming mode if the current gaming status is determined to be above a first predefined threshold, operate the gaming system to provide a second plurality of consecutive games at the second gaming mode, wherein each of the second plurality of consecutive games together generates a second gaming outcome that is dependent on the gaming status for the first gaming mode when transitioning to the second gaming mode, and determine a total gaming outcome based on the first and the second gaming outcome. This aspect of the present disclosure provides similar advantages and embodiments as discussed above in relation to the previous aspects of the present disclosure.

[0040] Preferably, the gaming system is a cloud-based computing system, and the server is a cloud server. Thus, the computing power provided by means of the invention may be distributed between a plurality of servers, and the location of the servers must not be explicitly defined. Advantageous following the use of a cloud-based solution is also the inherent redundancy achieved.

[0041] In some embodiments the electronic user devices may be selected to include e.g. a computer (laptop/stationary), a mobile phone, a tablet, a (gaming) consoles or any other gaming device and gambling terminals. The GUI may in some embodiments be allowed to depend on the type of electronic user device.

[0042] According to a still further aspect of the present disclosure there is provided a computer program product comprising a computer readable medium having stored thereon computer program means for operating a gaming system, the gaming system adapted to execute a gaming procedure operated at each one of a plurality of different gaming modes, the plurality of different gaming modes including at least a first and a second gaming mode being different from each other, the gaming system comprising a server arranged in communication with an electronic user device using a network connection, the electronic user device comprising a display screen, wherein the computer program product comprises code for operating, by the server, the gaming system to provide a first plurality of consecutive games at the first gaming mode, including code for forming, at the server, a gra-

phical gaming area to be displayed at the display screen of the electronic user device, the graphical gaming area comprising a first portion defining a table comprising a predetermined number of cells, code for generating, at the server, a set of elements corresponding to the cells of the table, each generated element being one of a plurality of predefined element types, code for populating, at the server, the cells of the table with the set of elements, code for controlling, using the server, the electronic user device to display the table at the display screen, code for matching, at the server, adjacently arranged elements within the cells of the table with one of a plurality of predefined element formations stored at the server, code for determining, at the server, a first gaming outcome if the matching results in a successful element matching, code for increasing, by the server, a current gaming status for the first gaming mode if the matching results in a successful element matching, and code for transitioning, by the server, the gaming system to the second gaming mode if the current gaming status is determined to be above a first predefined threshold, code for operating, by the server, the gaming system to provide a second plurality of consecutive games at the second gaming mode, wherein each of the second plurality of consecutive games together generates a second gaming outcome that is dependent on the gaming status for the first gaming mode when transitioning to the second gaming mode, and code for determining, by the server, a total gaming outcome based on the first and the second gaming outcome. Also this aspect of the present disclosure provides similar advantages and embodiments as discussed above in relation to the previous aspects of the present disclosure.

[0043] The computer program product is typically executed using a computing device comprised with the server, preferably including a microprocessor or any other type of computing device. Similarly, a software executed by the server for operating the gaming system may be stored on a computer readable medium, being any type of memory device, including one of a removable nonvolatile random access memory, a hard disk drive, a floppy disk, a CD-ROM, a DVD-ROM, a USB memory, an SD memory card, or a similar computer readable medium known in the art. Accordingly, operation of the gaming system may be at least partly automated, implemented as e.g. software, hardware and a combination thereof.

[0044] Further features of, and advantages with, the present disclosure will become apparent when studying the appended claims and the following description. The skilled addressee realizes that different features of the present disclosure may be combined to create embodiments other than those described in the following, without departing from the scope of the present disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0045] The various aspects of the present disclosure, including its particular features and advantages, will be

readily understood from the following detailed description and the accompanying drawings, in which:

Fig. 1 illustrates an exemplary gaming system according to a currently preferred embodiment of the present disclosure;

Fig. 2 provides an exemplary illustration of a typical graphical user interface (GUI) for use in playing a game at a base gaming mode;

Figs. 3A - 3C provides an exemplary illustration of a typical graphical user interface (GUI) for use in playing a game, operated at a first gaming mode;

Figs. 4A - 4C provides an exemplary illustration of a typical graphical user interface (GUI) for use in playing a game, operated at a second gaming mode; and Figs. 5A - 5G provides a further exemplary illustration of a typical graphical user interface (GUI) for use in playing a game according to an embodiment of the present disclosure; and

Fig. 6 is a flow chart illustrating the exemplary steps for operating the gaming system as shown in Fig. 1.

DETAILED DESCRIPTION

[0046] The present disclosure will now be described more fully hereinafter with reference to the accompanying drawings, in which currently preferred embodiments of the present disclosure are shown. This present disclosure may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided for thoroughness and completeness to fully convey the scope of the present disclosure to the skilled addressee. Like reference characters refer to like elements throughout.

[0047] Referring now to the drawings and Fig. 1 in particular, there is depicted a gaming system 100 in which an online game, such as a slot game, may be played according to a currently preferred embodiment of the present disclosure. The system architecture illustrated in Fig. 1 depicts a system environment in which systems, methods, apparatus, computer-readable mediums and data structures consistent with the principles of some embodiments of the present disclosure may be included. It may be appreciated that the components of system 100 may be implemented through any suitable combinations of hardware, software, and/or firmware.

[0048] As shown in Fig. 1, system 100 includes at least one server 102 and/or at least one gaming database 104. Server 102 and gaming database 104 may be communicably linked to a plurality of electronic user devices in the form of electronic user devices, such as client devices 106, 108, 110, etc. through network 112. The network 112 may be wired or wireless, including for example wired connections like a building LAN, a WAN, an Ethernet network, an IP network, etc., and wireless connections like WLAN, CDMA, GSM, GPRS, 3G mobile communications, 4G mobile communications, Bluetooth, infrared,

or similar. As such, the network 112 may be locally and/or globally provided.

[0049] The gaming database 104 may be any type of physical unit on which games reside, such as a machine in a gaming venue, a lottery machine, an electronic game system, etc. Network 112 may be implemented as the Internet, or any local or wide area network, either public or private. Network 112 may also be a hardware system physically connecting some or all of the server 102 and client devices 106, 108, 110. Client devices 106, 108, 110, typically each operated by a player, may be implemented as any computing devices such as a personal computing device, a server, a server network, handheld computing device, slot machine, other gaming machine in a gaming venue such as a betting terminal, a gaming console, lottery machine, an interface in a virtual environment, etc.

[0050] It may be appreciated by one of ordinary skill in the art that while only one server, one gaming database, one network and two client devices are depicted, more or fewer servers, more or fewer gaming databases, more networks and more or fewer client devices and/or other devices may reside within system 100.

[0051] The elements inside system 100 may include one or more (micro) processors, purpose-built hardware such as, for example, FPGA, ASIC, etc., software systems and applications, software packages, mechanical and electrical parts, etc. Software packages that may be part of server 102, gaming database 104, client devices 106, 108, 110 and network 112 may be recorded on a computer readable medium such as a memory device, RAM, CD/DVD/USB drives, handheld memory device, etc., and/or may be part of a physical device such as one or more (microprocessors or electro-mechanical systems. Any of server 102, gaming database 104, client devices 106, 108, 110, network 112 and further electronic user device 114 may be fixed systems, mobile systems, portable systems, or cloud systems (as discussed above). Fig. 1 shows only three electronic user devices 106, 108, 110, however it should be understood that a general implementation of the present disclosure comprises a large plurality of electronic user devices, possibly greatly above three, such as 100, 1000, 10000, etc.

[0052] Although the various components of Fig. 1 are illustrated as discrete elements, it should be recognized that certain operations of some of the various components may be performed by the same physical device, e.g., by one or more microprocessors or other type of devices.

[0053] Turning now to Fig. 2 illustrating a graphical user interface (GUI) 202 to be displayed at a client device, such as any of the client devices 106, 108, 110, in the illustrated embodiment provided as an application ("app") or within e.g. a web browser of the portable client device 106 being a tablet. The game to be played at the client device 106 is here shown as an online game of chance in the form of a slot game, visualized within the GUI 202 as comprising a grid-based table 200 comprising

five individual reels 204 arranged in columns (C1 - C5) and provided with a plurality of different symbols or elements. The grid-table 200 also comprises three rows (R1 - R3). As such, the predefined dimension of the grid-table 200 as shown in Fig. 2 is five times three, thus comprising 15 cells in total.

[0054] The GUI also comprises a "button" 206 to start the game, here provided with the description "SPIN" for initiating a turn of the game. In addition, the GUI 202 comprises an indicator of the current bet 208 (i.e. payment for each turn of the game) and an indicator of the total payment to the player 210. It should in any case be understood that other types of games may be played within the scope of the present disclosure, for example being skill based as compared to a game of chance.

[0055] As indicated in Fig. 2, the GUI 202 further comprises a gaming mode indicator 212 possibly presenting an indication of one of three gaming modes. Further gaming modes are of course possible and within the scope of the present disclosure. In Fig. 2, the game is operated at a base gaming mode.

[0056] The GUI 202 further comprises a gaming status indicator 220, here visually exemplified as a "gauge". The gaming status indicator 220 comprises a pointer 222 extending between a minimum status "level" 224 and a maximum status level 226. The gaming status indicator 220 is further provided with two separate thresholds, a lower threshold 228 being above the minimum status level 224 and a higher threshold 230 being below the maximum status level 226, as will be further elaborated below.

[0057] As mentioned above, in Fig. 2 the game is operated at the base gaming mode, and it is in line with the present disclosure possible to progress the overall gaming scenario to at least a first and a second gaming mode that may be defined as more advanced gaming modes as compared to the base gaming mode. To the pleasure of the player operating the client device 106, the elements populating the grid-table as shown in Fig. 2 comprises a set of special elements, here in the form of joker elements, which when identified by the server 102 progresses the game to the first gaming mode as will be further discussed in relation to Figs. 3A - 3C in conjunction with Fig. 6.

[0058] With reference first to Fig. 3A, in a similar manner as in relation to the presentation of Fig. 2, the server 102 is configured to be operated, S 1, to provide a first plurality of consecutive games at the first gaming mode. Subsequently, the server will form, S2, a grid-table 300 corresponding to the table as shown in Fig. 2. Also Fig. 3A, the GUI comprises the gaming mode indicator 212 and the gaming status indicator 220. The gaming mode indicator 212 has now progressed to the next mode, reflecting the transition to the first gaming mode from the base gaming mode. Initially, the gaming status indicator 220 is indicated as being just above the lower threshold 228. The server 102 is further arranged to generate, S3, a set of gaming elements, matching the num-

ber of cells of the table 300. The server 102 subsequently populates, S4, the cells of table 300 with the generated elements, after which it controls, S5, the electronic user device 106 to display the populated table on the screen. Typically, the cells in the grid are randomly filled with a variety of traditional slot game icons, including but not limited to bars, cherries, and the number seven. These icons provide a visual representation of the range of outcomes elements to be used in conjunction with the slot game according to the present disclosure.

[0059] The determination of if there in fact is a win based on the elements now comprised with the table 300 is in accordance with the present disclosure determined, S6, using for example a predefined matching scheme. Such a predefined matching scheme may for example utilize a set of criteria to evaluate the element's arrangement on the grid, identifying matching results that qualify as winning outcomes. When such an alignment is determined, the server 102 will proceed to determine, S7, a first gaming outcome. In Fig. 3A a small set of similar elements form a cluster within the table 300, indicating a positive first gaming outcome. A positive first gaming outcome will also increase, S8, the gaming status indicator 220, as is visualized in Fig. 3B where now the pointer 222 is directed within an area further above the lower threshold 228.

[0060] As the game progresses, in line with Fig. 3B, the table 300 is for example populated with a new set of elements. A further positive first gaming outcome is generated in Fig. 3B, thereby further increasing the gaming status indicator 220, as is visualized in Fig. 3C where now the pointer 222 is directed within an area above the higher threshold 230.

[0061] As a result of the gaming status now being above the higher threshold 230, the game transitions, S9, to the second gaming mode, which is visualized in relation to Figs. 4A - 4C.

[0062] With reference first to Fig. 4A, in a similar manner as in relation to the presentation of Fig. 3A, the server 102 is configured to be operated, S10, to provide a second plurality of consecutive games at the second gaming mode. As is shown in Fig. 4A, a new set of elements are now populating a table 400. In a possible embodiment of the present disclosure, the element types populating the table 400 when the game is operated at the second gaming mode may possibly differ from the element types used in relation to the base and/or the first gaming mode. That is, a different "pool" of element types may be used on relation to the second gaming mode as compared to the base gaming mode and/or the first game mode.

[0063] In line with the present disclosure, the server 102 is further arranged to generate a second gaming outcome for each of the second plurality of consecutive games at the second gaming mode. However, when reaching the second gaming mode and differently to the first gaming mode, the second gaming outcome is arranged to be dependent on the gaming status for the

first gaming mode when transitioning to the second gaming mode. Accordingly, if the player has performed, in comparison, very well when the game is operated at the first gaming mode this fact will extend to the determination of the second gaming outcome.

[0064] As will be seen in Figs. 4B and 4C, the table 400 is continuously, typically randomly or semi-randomly, populated with further elements while the elements of the previous game at the second gaming mode (i.e. in the series of consecutive games), while the elements from the previous game remains (sometimes referred to as "sticky" elements).

[0065] The server 102 will subsequently determine a total gaming outcome based on the first and the second gaming outcome. Accordingly, the total gaming outcome that in the end is provided to the player of the client device 106 will be dependent on the winnings at the first gaming mode together with the winnings at the second gaming mode, where the winnings at the second gaming mode in turn depend on how well the player performed at the first gaming mode (reflected by the gaming status).

[0066] Turning finally to Figs. 5A - 5G, presenting a further exemplary illustration of a typical graphical user interface (GUI) for use in playing a game according to an embodiment of the present disclosure. Again, the gaming operation provided by the server 102 starts with the above discussed "base gaming mode", see Fig. 5A, here presented in conjunction with a table 500. The table 500 is again exemplified to comprise five columns C1 - C5 and three rows R1 - R3, even though it should be understood that any number of columns and rows are possible and within the scope of the present disclosure. The operation at base game mode follows generally the operation presented in relation to Fig. 2.

[0067] The GUI presented at Fig. 5A has further been provided with a section 502 presenting not yet available "bonus prizes" that will be later available as the game progresses, as will be elaborated below.

[0068] As shown in Fig. 5A, the player has managed to be provided with or has collected three "trigger elements" 504, each illustrated as encircled with a dashed line. In line with the present disclosure, once the server 102 has identified such an exemplary combination of trigger elements (where the illustration in Fig. 5A is just one of many possible examples), the game progresses to the first gaming mode.

[0069] However, before the display screen of the client device 106 is updated with information relevant for the first gaming mode, the player may in some instances, as shown in Fig. 5B, be presented with e.g. a "pop-up" element 506 possibly congratulating the player. Such a pop-up could potentially be provided with further information for explaining how to operate the game at the first gaming mode.

[0070] Once the display of the client device 106 has been updated for operation of the game at the first gaming mode, as outlined in Fig. 5C, a further table 508. In the illustration presented in Fig. 5C, the first gaming mode is

exemplified as a free spin mode of the game. As shown in Fig. 5C, the table 508 used in relation to the first/free spin gaming mode here comprises an additional "grid" 510 arranged in this exemplary implementation above the grid as was typically used in relation to Fig. 5A. The additional grid 510 is populated with predefined elements 512, 514, 516, 518 being categorized into varying prize categories, for example, mini 512, minor 514, major 516 or gran 518, and may include multipliers, awards, physical prizes and monetary prizes, preferably monetary prizes. Other possible elements are of course possible and within the scope of the present disclosure.

[0071] During the first mode in line with Fig. 5C and 5D, the table 508 is for example populated with a new set of elements, and the player will collect predefined elements e.g. a "wild symbol" as highlighted at C2-R2 and C3-R1 in Fig. 5C. Collection of the predefined elements influences the value of the predefined elements 512, 514, 516, 518 in the additional grid 510. In this example the 'mini' redefined element 512 is substituted with a mega symbol. The first mode of the game continues in this fashion for the duration of the available number of free games in this first gaming mode.

[0072] The collation and substitution of the predefined elements is not dependent on filling the additional grid 510 because the more "wilds" that are collected, the more the predefined elements in the second grid increase incrementally in value. Furthermore, in order for a player to move from the first mode of the game to a second mode of the game, the player is required to collect a certain number of predefined elements i.e. wilds.

[0073] It may in some embodiments be desirable to stress that if a player has in fact collected the requisite number of jokers to move to the second mode of the game, this will not trigger the second mode. In fact, the first mode will continue until all the allocated "free" rounds for the first mode of the game have occurred. This is because a player will continue to upgrade the predefined elements in the additional grid.

[0074] However, in case the player has been successful at the first gaming mode, the player will be presented with a further "pop-up" as is exemplified in relation to Fig. 5E with table 520. Again, the table 520 may in a similar manner as is outlined in relation to Fig. 5B be provided with congratulating information in combination with e.g. information on how to operate the game once progressing to the second gaming level.

[0075] At the second gaming mode, as is exemplified in relation to Figs. 5F and 5G, the game is progressed further. The second gaming mode is in relation to Figs. 5F and 5G here presented as a bonus round. As discussed above, when reaching the second gaming mode, the second gaming outcome is arranged to be dependent on the gaming status for the first gaming mode when transitioning to the second gaming mode i.e. the amount that can be won by a player in the bonus round is dependent on the amount and type and value of predefined elements collected during the first game mode i.e. the

free spins mode. Accordingly, if the player has performed, in comparison, very well when the game is operated at the first gaming mode this fact will extend to the determination of the second gaming outcome.

[0076] Finally, in Fig. 5G also the bonus game has been concluded and the total gaming outcome from the first and the second gaming mode will be determined by the server 102. Here, the total gaming outcome is presented to the player at portion 524 of the gaming interface shown at the display of the client device 106.

[0077] It should be noted that the operation of the game as presented in relation to Figs. 5A - 5G is one many possible implementations of the overall gaming scheme as defined in the claims and as outlined in relation to Figs. 2, 3A - 3C and 4A - 4C.

[0078] Within the context of the present disclosure and the above discussed embodiment, the gaming system may in some embodiments employ a centralized mechanism for updating the game table on the server, controlling which cells within the table require updating based on game logic and player interactions. Upon determining that a cell update is necessary, the server sends only the modified cell data to the client device, rather than refreshing the entire game state. Such a targeted updating process enhances real-time responsiveness by reducing the volume of data transmitted to the client and lowering the device's processing demand, ensuring that players experience smooth gameplay without interruptions. The suggested method allows the server to manage high-frequency updates effectively, supporting fast-paced gaming environments where rapid state changes are common.

[0079] The control functionality of the present disclosure may be implemented using existing computer processors, or by a special purpose computer processor for an appropriate system, incorporated for this or another purpose, or by a hardwired system. Embodiments within the scope of the present disclosure include program products comprising machine-readable media for carrying or having machine-executable instructions or data structures stored thereon. Such machine-readable media can be any available media that can be accessed by a general purpose or special purpose computer or other machine with a processor. By way of example, such machine-readable media can comprise RAM, ROM, EPROM, EEPROM, CD-ROM or other optical disk storage, magnetic disk storage or other magnetic storage devices, or any other medium which can be used to carry or store desired program code in the form of machine-executable instructions or data structures and which can be accessed by a general purpose or special purpose computer or other machine with a processor. When information is transferred or provided over a network or another communications connection (either hardwired, wireless, or a combination of hardwired or wireless) to a machine, the machine properly views the connection as a machine-readable medium. Thus, any such connection is properly termed a machine-readable medium. Combi-

nations of the above are also included within the scope of machine-readable media. Machine-executable instructions include, for example, instructions and data which cause a general-purpose computer, special purpose computer, or special purpose processing machines to perform a certain function or group of functions.

[0080] Although the figures may show a sequence the order of the steps may differ from what is depicted. Also two or more steps may be performed concurrently or with partial concurrence. Such variation will depend on the software and hardware systems chosen and on designer choice. All such variations are within the scope of the disclosure. Likewise, software implementations could be accomplished with standard programming techniques with rule-based logic and other logic to accomplish the various connection steps, processing steps, comparison steps and decision steps. Additionally, even though the present disclosure has been described with reference to specific exemplifying embodiments thereof, many different alterations, modifications and the like will become apparent for those skilled in the art. Further, a single unit may perform the functions of several means recited in the claims. In the claims, any reference signs placed between parentheses shall not be construed as limiting to the claim. Furthermore, in the claims, the word "comprising" does not exclude other elements or steps, and the indefinite article "a" or "an" does not exclude a plurality.

[0081] Variations to the disclosed embodiments can be understood and effected by the skilled addressee in practicing the claimed present disclosure, from a study of the drawings, the disclosure, and the appended claims. The person skilled in the art realizes that the present disclosure is not limited to the preferred embodiments.

Claims

1. A computer implemented method performed by a gaming system adapted to execute a gaming procedure operated at each one of a plurality of different gaming modes, the plurality of different gaming modes including at least a first and a second gaming mode being different from each other, the gaming system comprising a server arranged in communication with an electronic user device using a network connection, the electronic user device comprising a display screen, wherein the method comprises the steps of:

- operating, by the server, the gaming system to provide a first plurality of consecutive games at the first gaming mode, including:

- forming, at the server, a graphical gaming area to be displayed at the display screen of the electronic user device, the graphical gaming area comprising a first portion de-

fining a table comprising a predetermined number of cells,

- generating, at the server, a set of elements corresponding to the cells of the table, each generated element being one of a plurality of predefined element types,
- populating, at the server, the cells of the table with the set of elements,
- controlling, using the server, the electronic user device to display the table at the display screen,
- matching, at the server, adjacently arranged elements within the cells of the table with one of a plurality of predefined element formations stored at the server,
- determining, at the server, a first gaming outcome if the matching results in a successful element matching,
- increasing, by the server, a current gaming status for the first gaming mode if the matching results in a successful element matching, and
- transitioning, by the server, the gaming system to the second gaming mode if the current gaming status is determined to be above a first predefined threshold,

- operating, by the server, the gaming system to provide a second plurality of consecutive games at the second gaming mode, wherein each of the second plurality of consecutive games together generates a second gaming outcome that is dependent on the gaming status for the first gaming mode when transitioning to the second gaming mode, and

- determining, by the server, a total gaming outcome based on the first and the second gaming outcome.

2. The method according to claim 1, wherein the table is graphically visualized as a plurality of parallel reels.

3. The method according to any one of claims 1 and 2, wherein at least a portion of the cells are provided with an updated set of elements for each one of the first plurality of consecutive games.

4. The method according to any one of the preceding claims, wherein the gaming procedure further comprises a base gaming mode, and wherein the gaming procedure is initiated at the base gaming mode.

5. The method according to any one of the preceding claims, wherein the first gaming mode comprises an adjustable number of free games.

6. The method according to claim 5, wherein the adjustable number of free games is dependent on if a

specific type of the predefined element types is identified from the set of elements within the table.

7. The method according to any one of claims 4-6, wherein the second gaming mode comprises a series of bonus rounds. 5
8. The method according to claim 7, further comprising the step of: 10
 - awarding a bonus, when operating the gaming procedure at the second gaming mode wherein, if a specific type of the predefined element types is identified from the set of elements within the table. 15
9. The method according to claim 8, wherein a gaming mode of the bonus is depending on a number of the specific type of the predefined element types being identified from the set of elements within the table. 20
10. The method according to any one of claims 8 and 9, wherein the specific type of the predefined element types remains within the table for a predetermined number of the consecutive games. 25
11. The method according to any one of the preceding claims, further comprising the step of decreasing the gaming mode if the gaming status for the first gaming mode is below a second predefined threshold being lower than the first predefined threshold. 30
12. The method according to claim 2 - 11, wherein the reels are visualized as spinning between each one of the consecutive games. 35
13. A gaming system adapted to execute a gaming procedure operated at each one of a plurality of different gaming modes, the plurality of different gaming modes including at least a first and a second gaming mode being different from each other, the gaming system comprising a server arranged in communication with an electronic user device using a network connection, the electronic user device comprising a display screen, wherein the server is adapted to: 40
 - operate, by the server, the gaming system to provide a first plurality of consecutive games at the first gaming mode, including: 45
 - form a graphical gaming area to be displayed at the display screen of the electronic user device, the graphical gaming area comprising a first portion defining a table comprising a predetermined number of cells, 50
 - generate a set of elements corresponding 55

to the cells of the table, each generated element being one of a plurality of predefined element types,

- populate the cells of the table with the set of elements,
 - control the electronic user device to display the table at the display screen,
 - match adjacently arranged elements within the cells of the table with one of a plurality of predefined element formations stored at the server,
 - determine a first gaming outcome if the matching results in a successful element matching,
 - increase a current gaming status for the first gaming mode if the matching results in a successful element matching, and
 - transition the gaming system to the second gaming mode if the current gaming status is determined to be above a first predefined threshold,
 - operate the gaming system to provide a second plurality of consecutive games at the second gaming mode, wherein each of the second plurality of consecutive games together generates a second gaming outcome that is dependent on the gaming status for the first gaming mode when transitioning to the second gaming mode, and
 - determine a total gaming outcome based on the first and the second gaming outcome.
14. The gaming system according to claim 13, wherein the gaming procedure further comprises a base gaming mode, and wherein the gaming procedure is initiated at the base gaming mode.
 15. A computer program product comprising a computer readable medium having stored thereon computer program means for operating a gaming system, the gaming system adapted to execute a gaming procedure operated at each one of a plurality of different gaming modes, the plurality of different gaming modes including at least a first and a second gaming mode being different from each other, the gaming system comprising a server arranged in communication with an electronic user device using a network connection, the electronic user device comprising a display screen, wherein the computer program product comprises:
 - code for operating, by the server, the gaming system to provide a first plurality of consecutive games at the first gaming mode, including:
 - code for forming, at the server, a graphical gaming area to be displayed at the display

screen of the electronic user device, the graphical gaming area comprising a first portion defining a table comprising a pre-determined number of cells,

- code for generating, at the server, a set of 5 elements corresponding to the cells of the table, each generated element being one of a plurality of predefined element types,
- code for populating, at the server, the cells 10 of the table with the set of elements,
- code for controlling, using the server, the electronic user device to display the table at the display screen,
- code for matching, at the server, adjacently 15 arranged elements within the cells of the table with one of a plurality of predefined element formations stored at the server,
- code for determining, at the server, a first gaming outcome if the matching results in a 20 successful element matching,
- code for increasing, by the server, a current gaming status for the first gaming mode if the matching results in a successful element matching, and
- code for transitioning, by the server, the 25 gaming system to the second gaming mode if the current gaming status is determined to be above a first predefined threshold,
- code for operating, by the server, the gaming 30 system to provide a second plurality of consecutive games at the second gaming mode, wherein each of the second plurality of consecutive games together generates a second gaming outcome that is dependent on the gam- 35 ing status for the first gaming mode when transitioning to the second gaming mode, and
- code for determining, by the server, a total gaming outcome based on the first and the 40 second gaming outcome.

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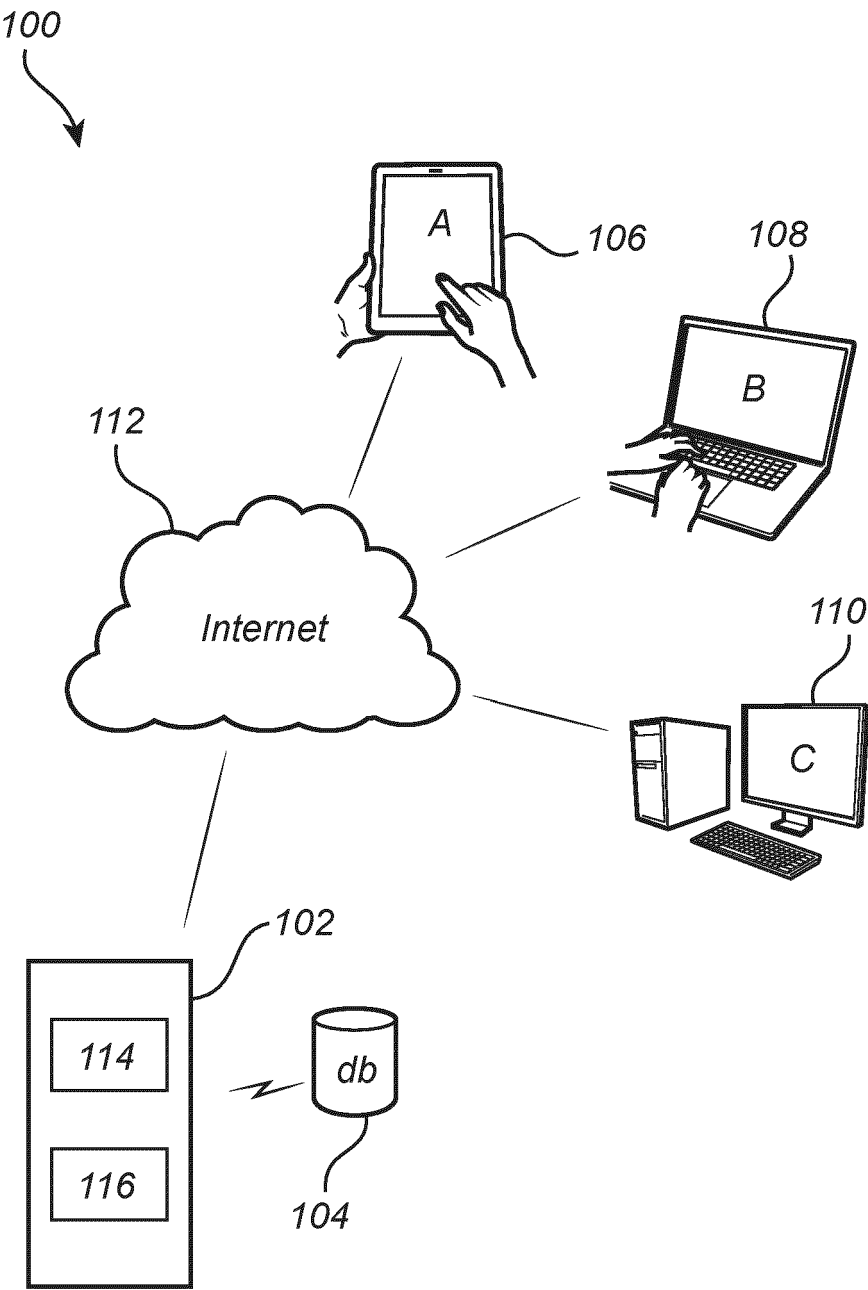


Fig. 1

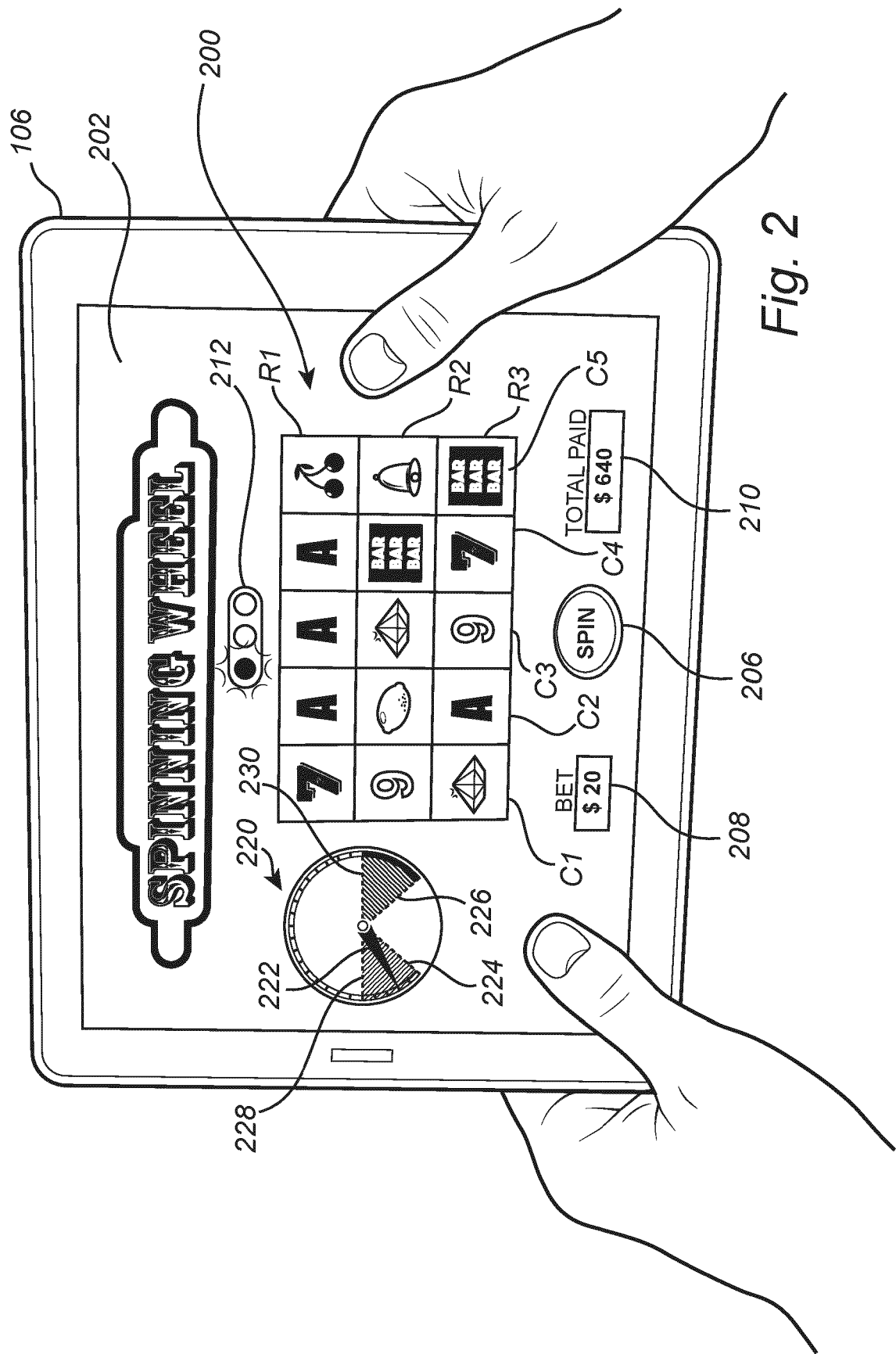


Fig. 2

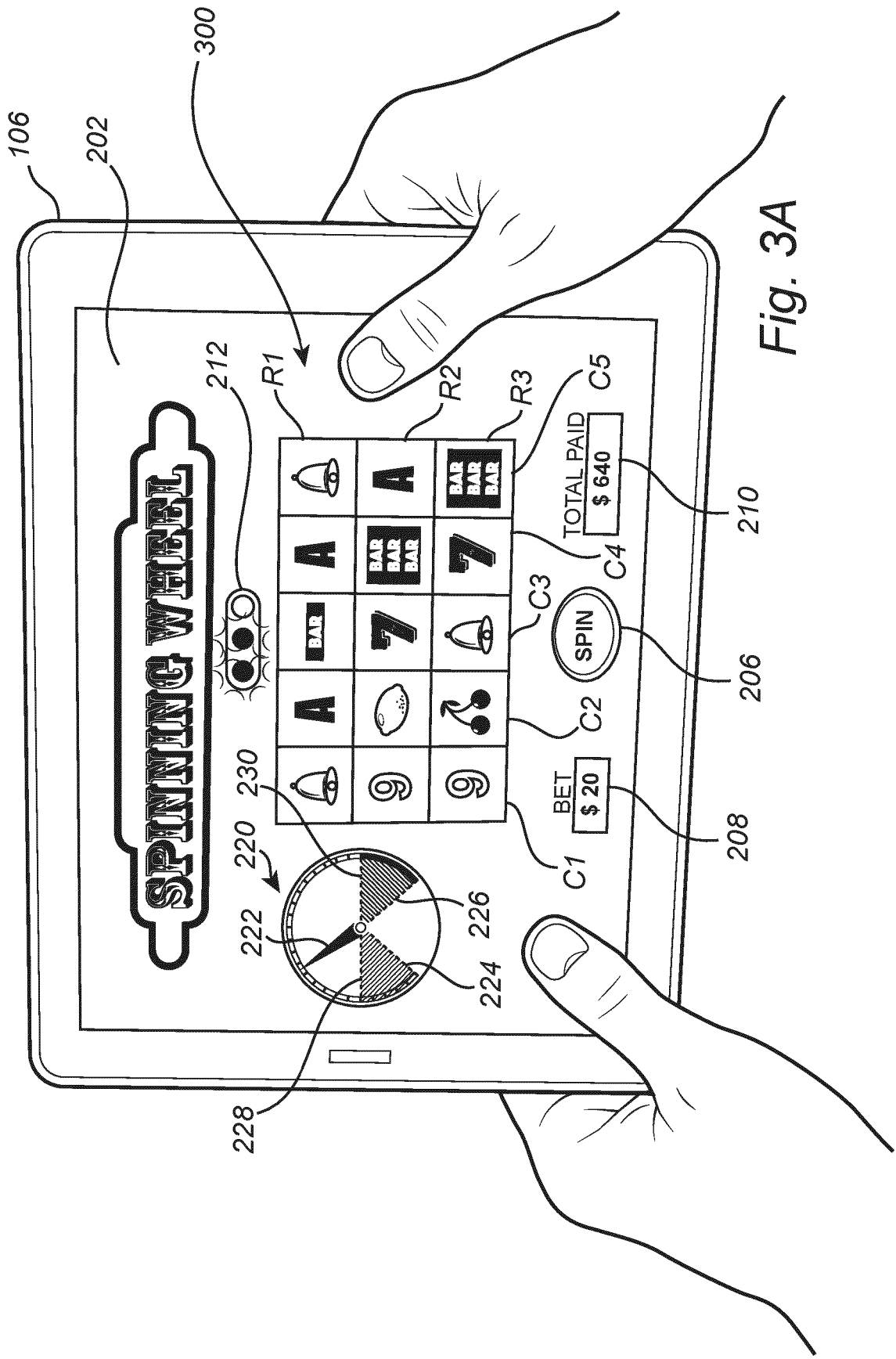


Fig. 3A

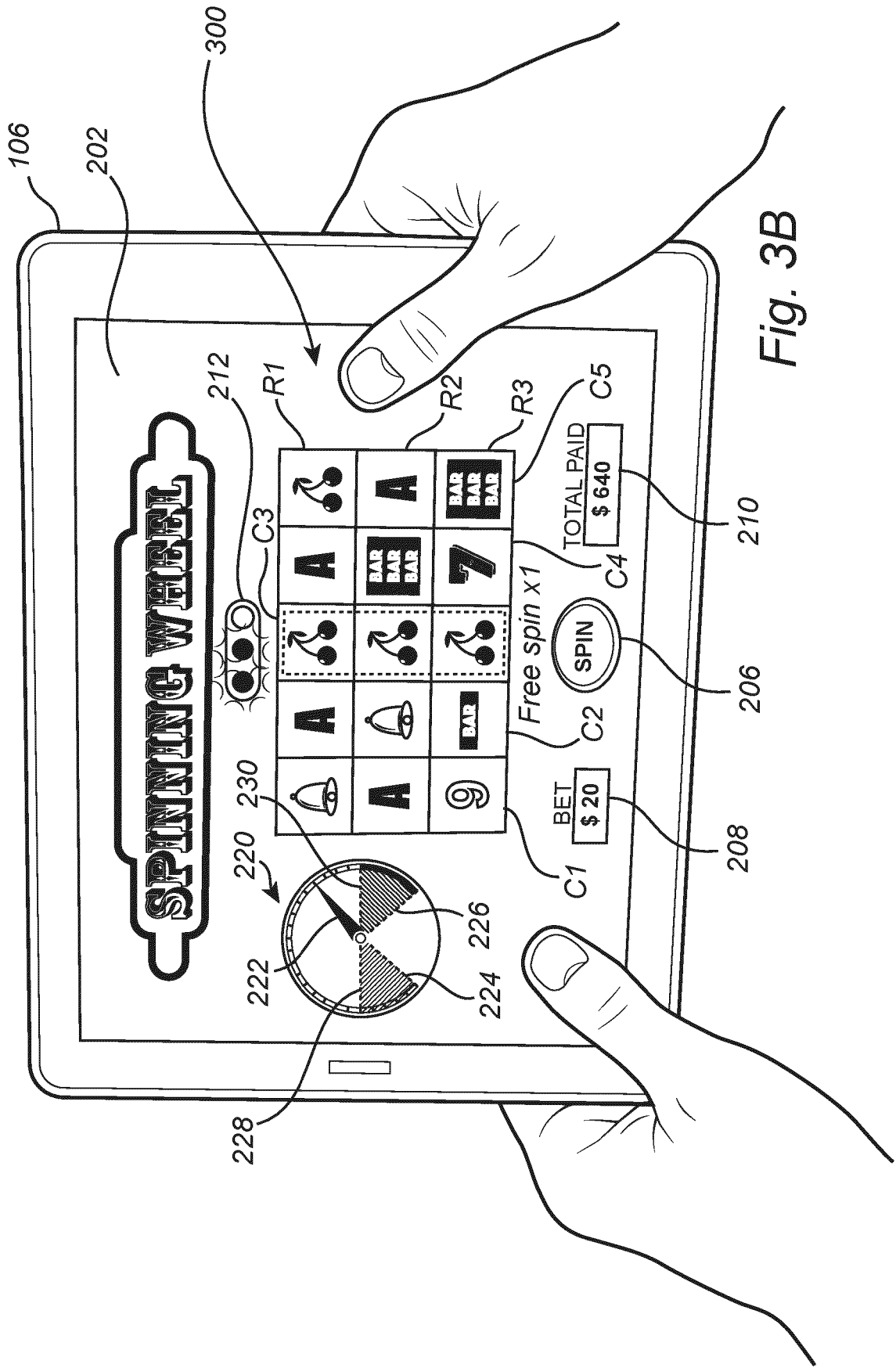


Fig. 3B

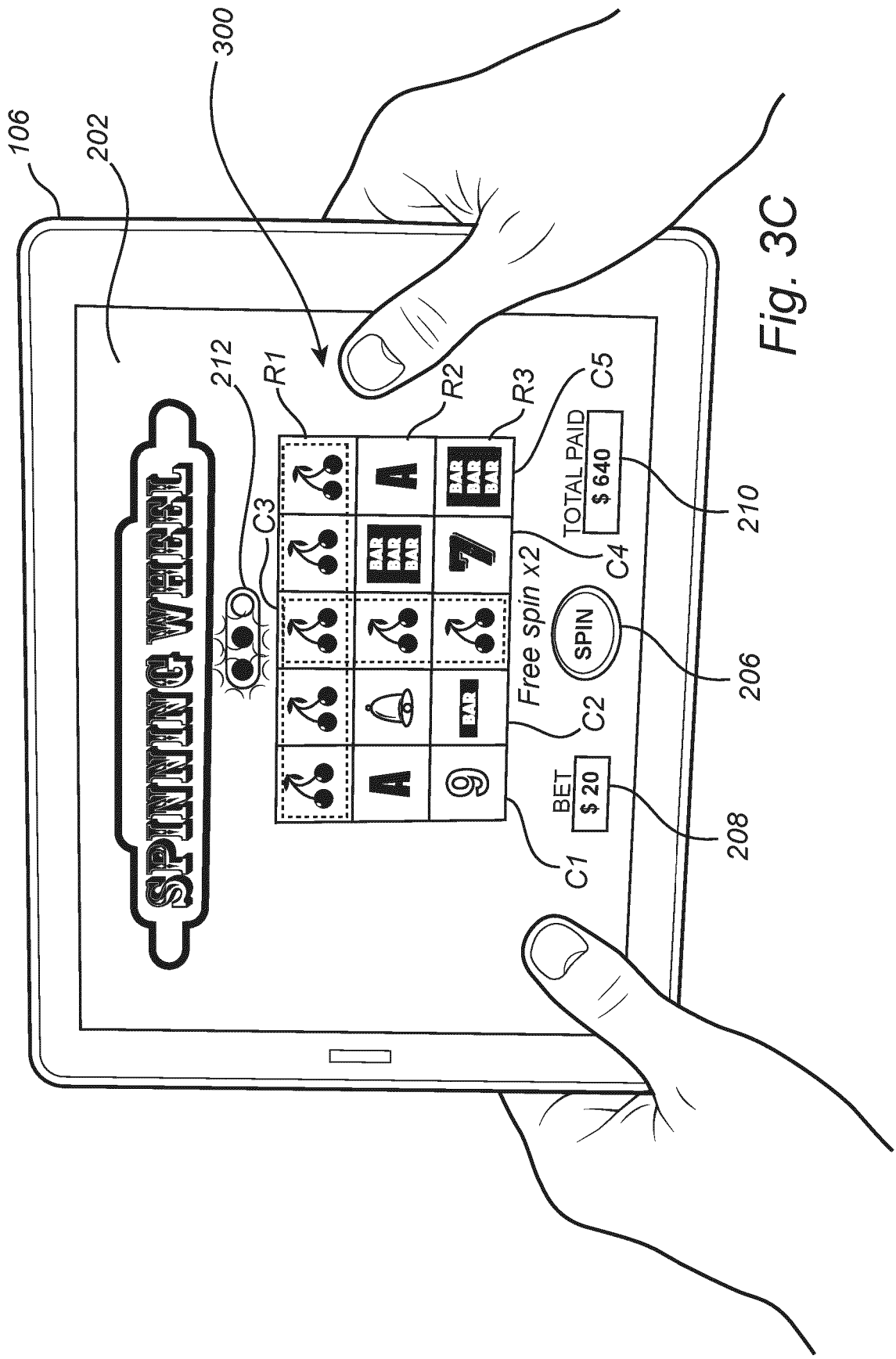
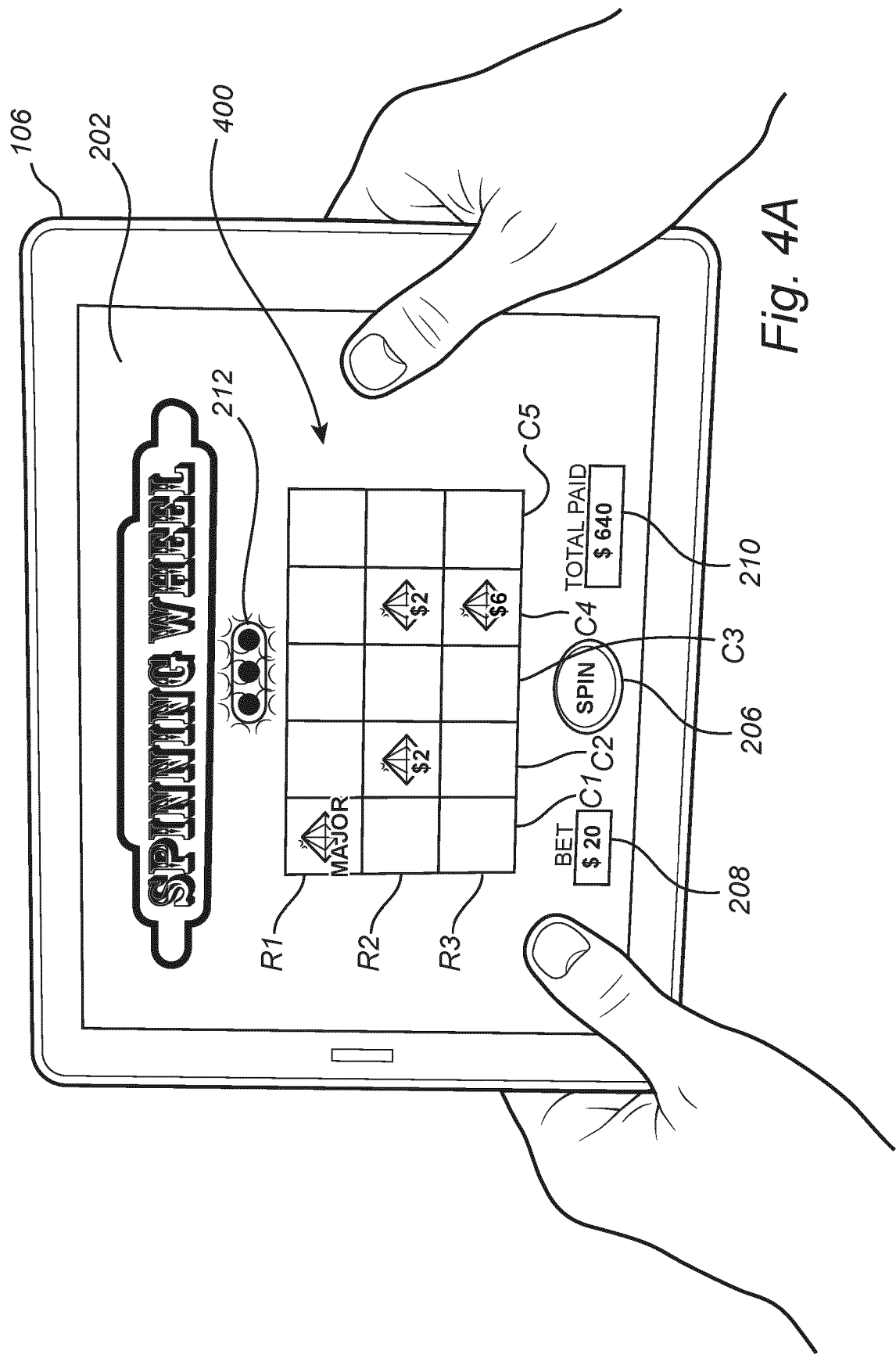


Fig. 3C



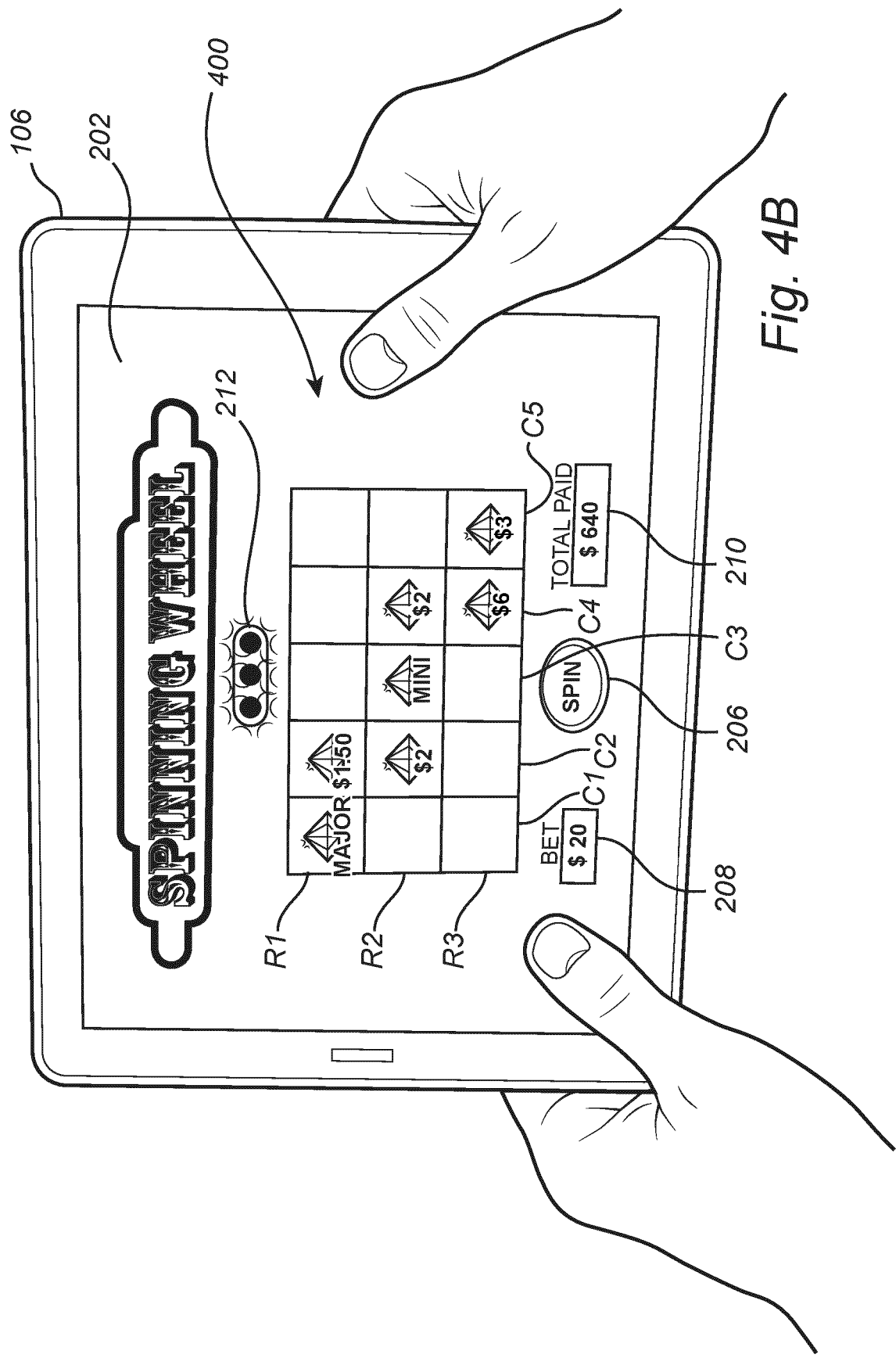


Fig. 4B

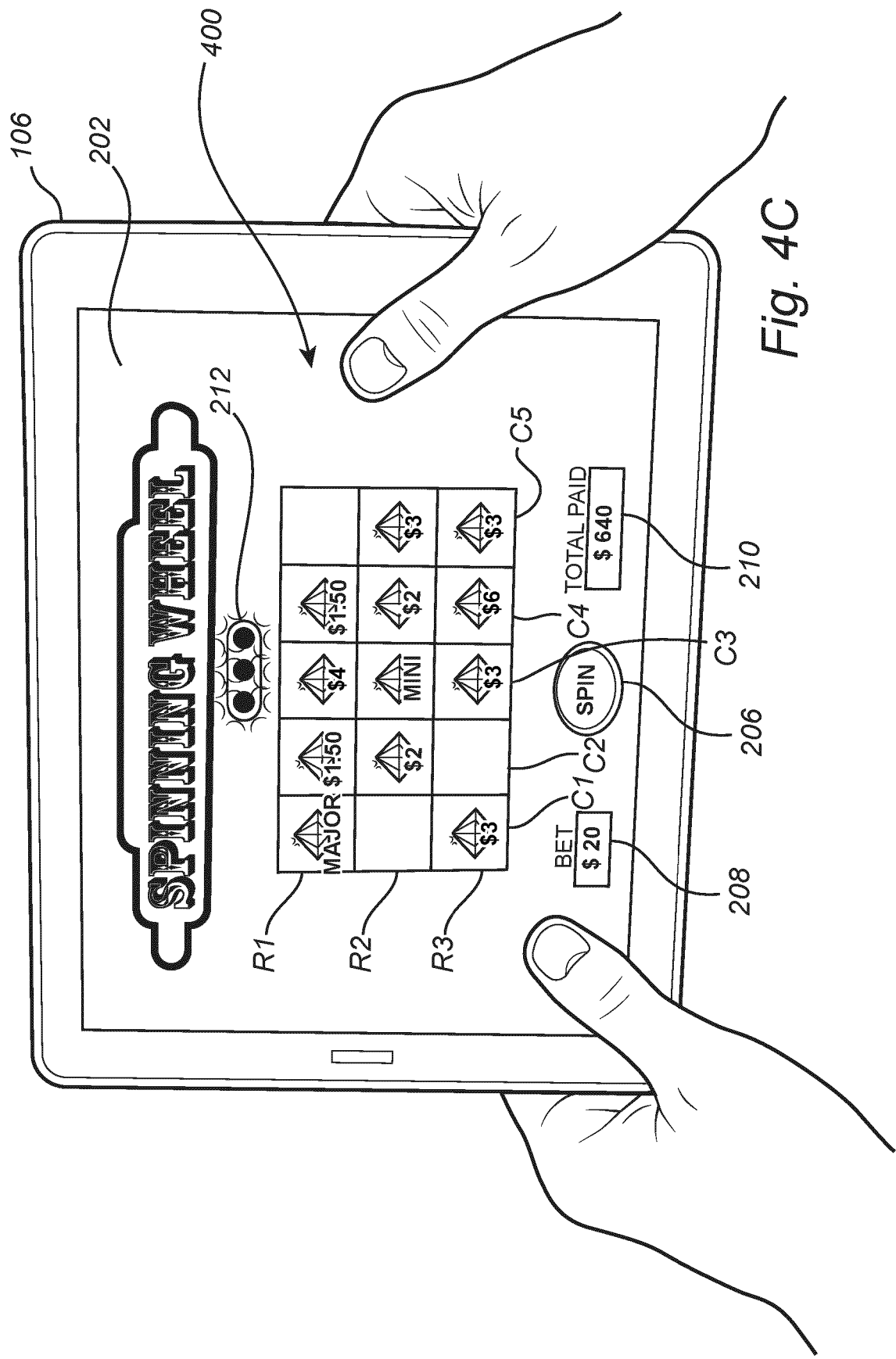


Fig. 4C

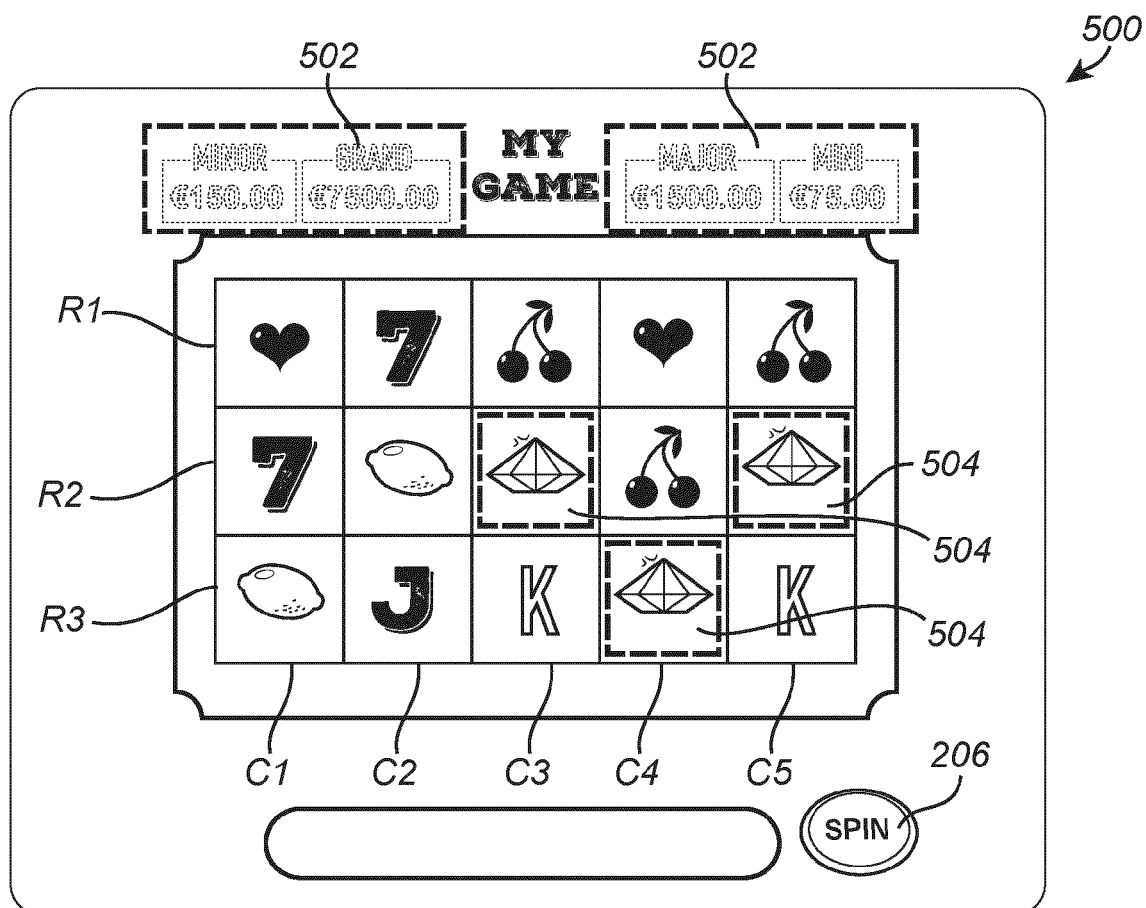


Fig. 5A



Fig. 5B

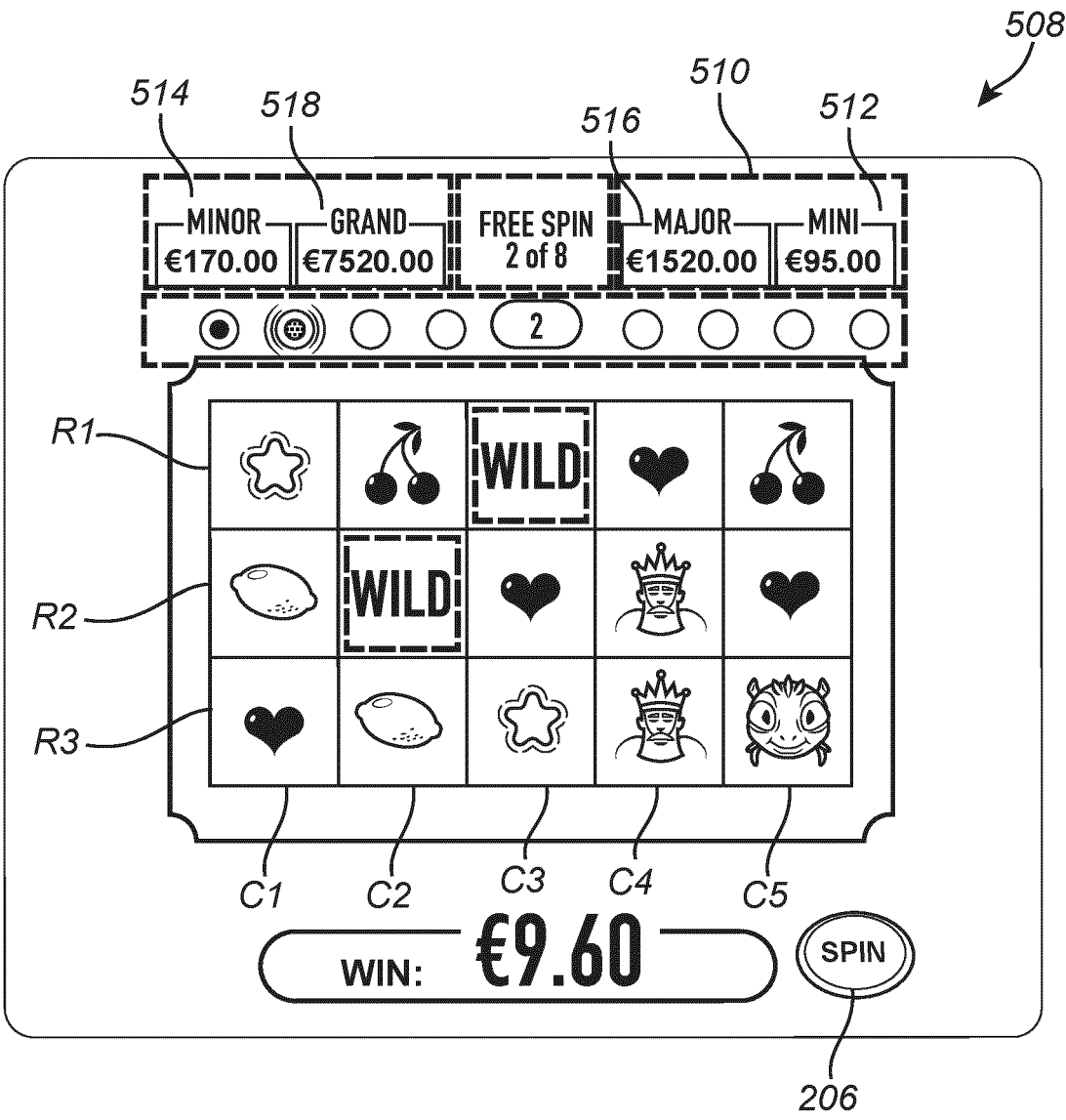


Fig. 5C

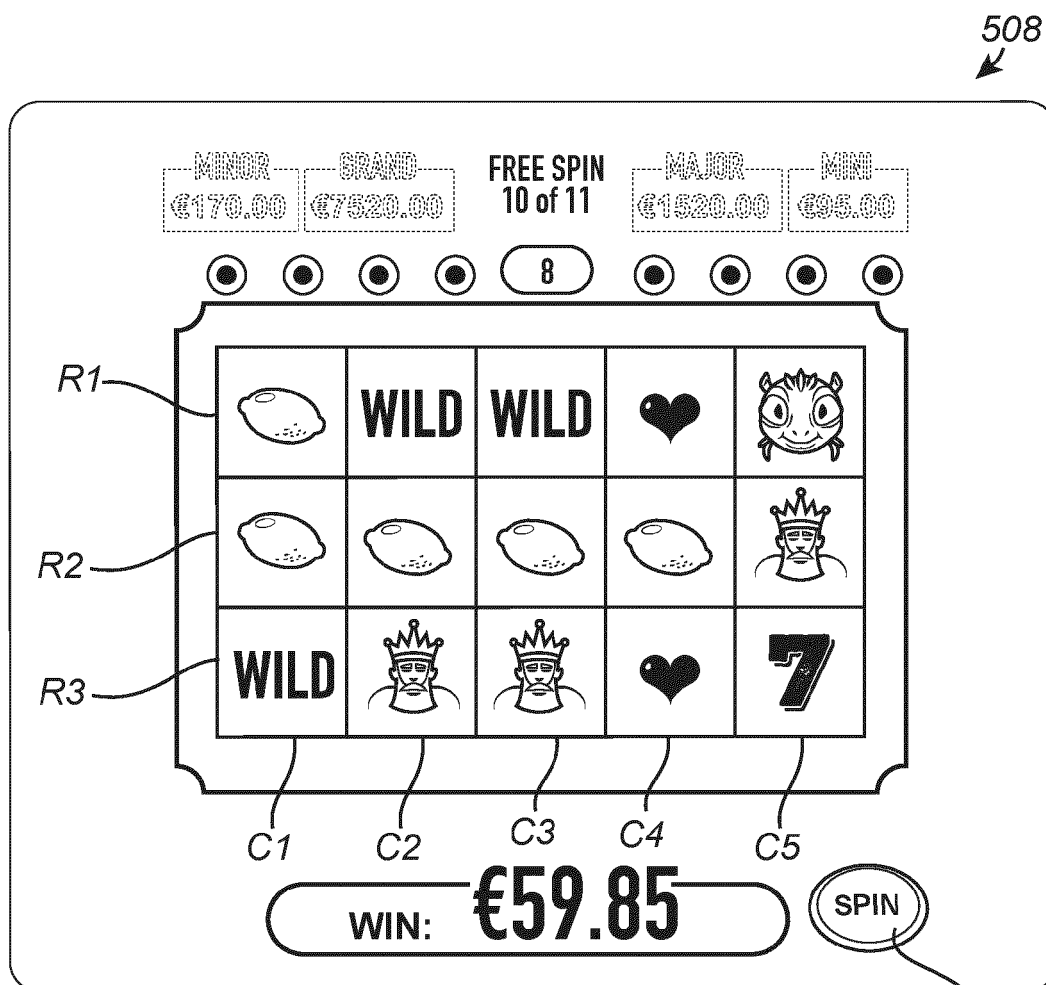


Fig. 5D



Fig. 5E

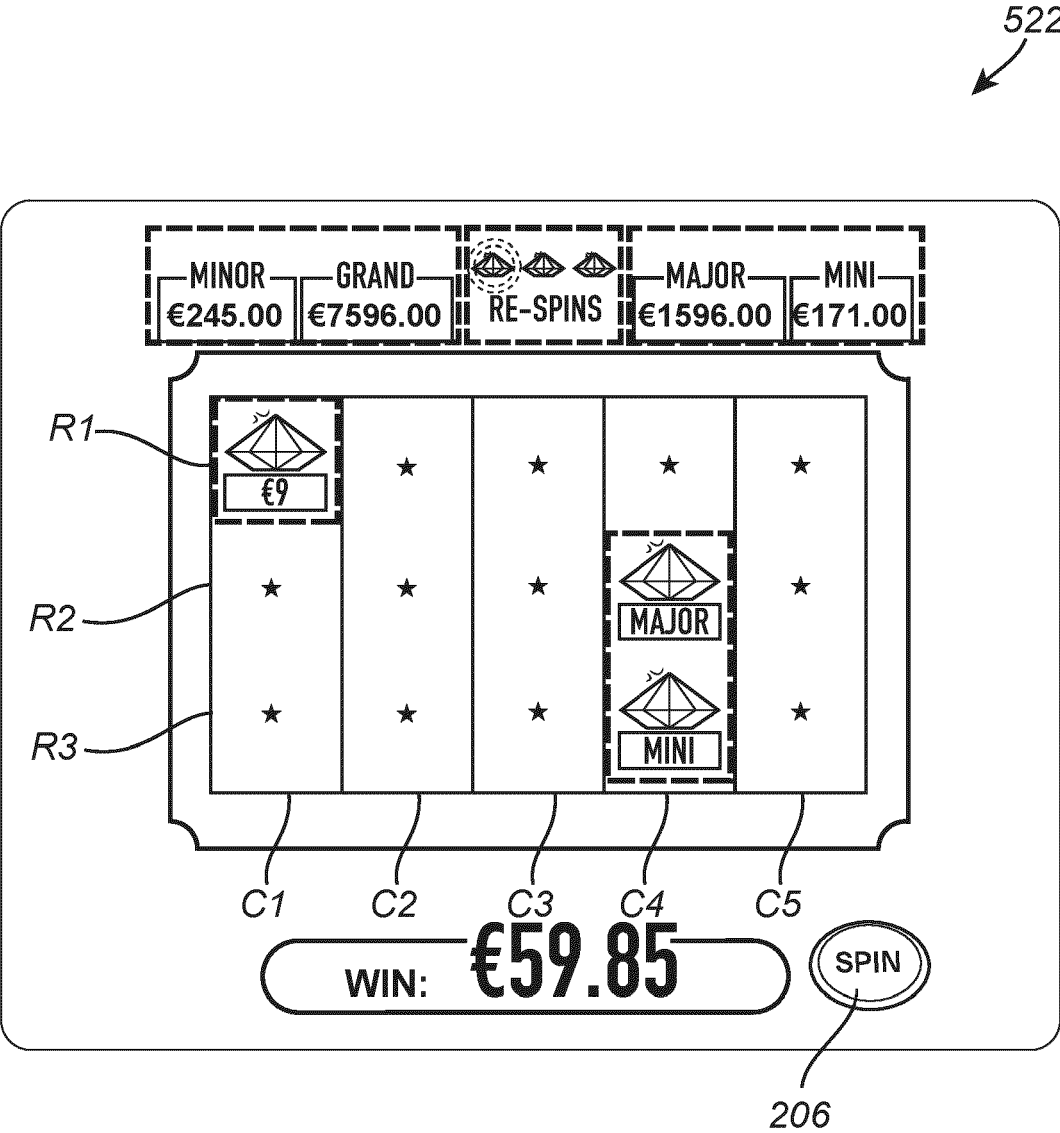


Fig. 5F

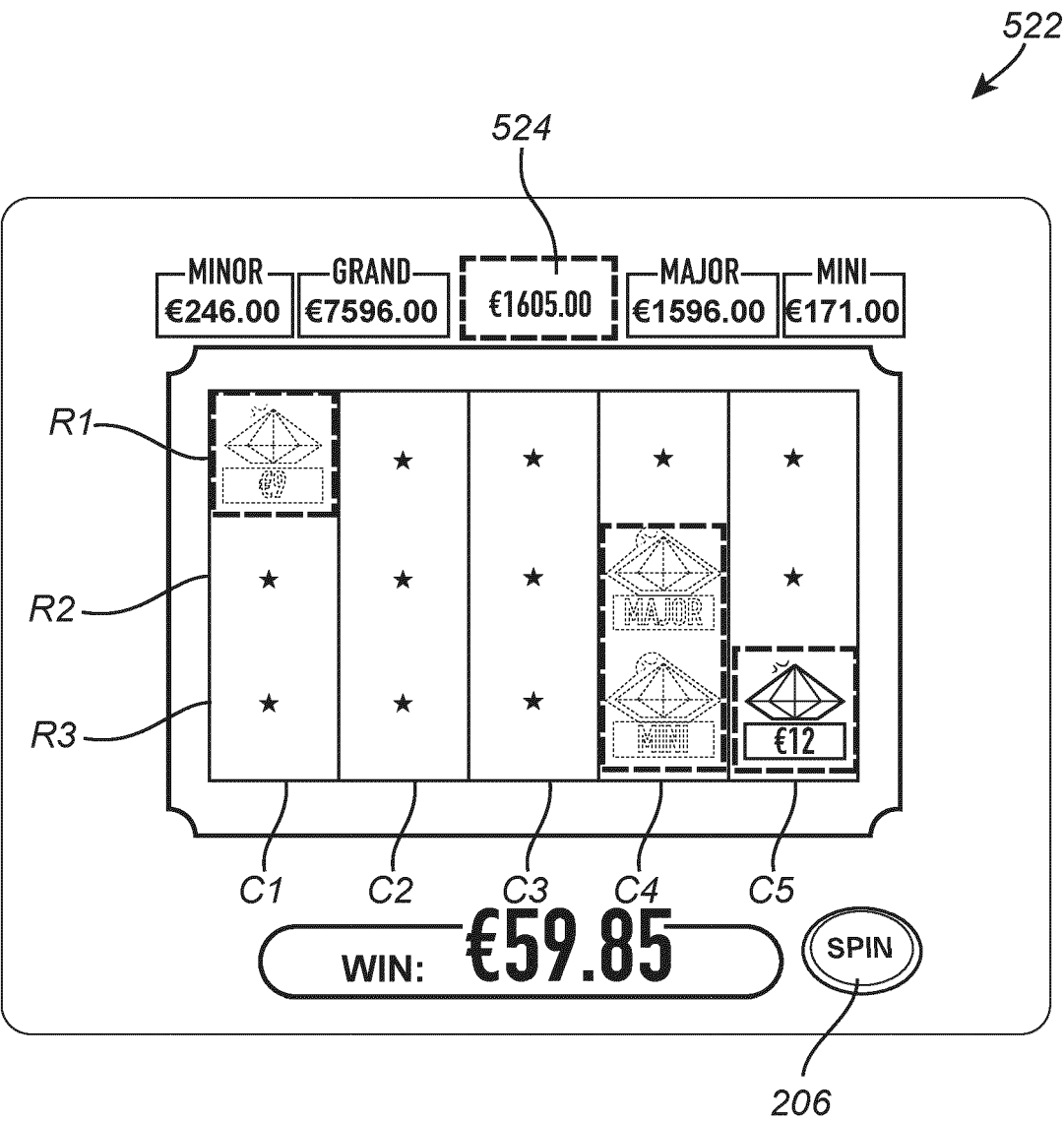
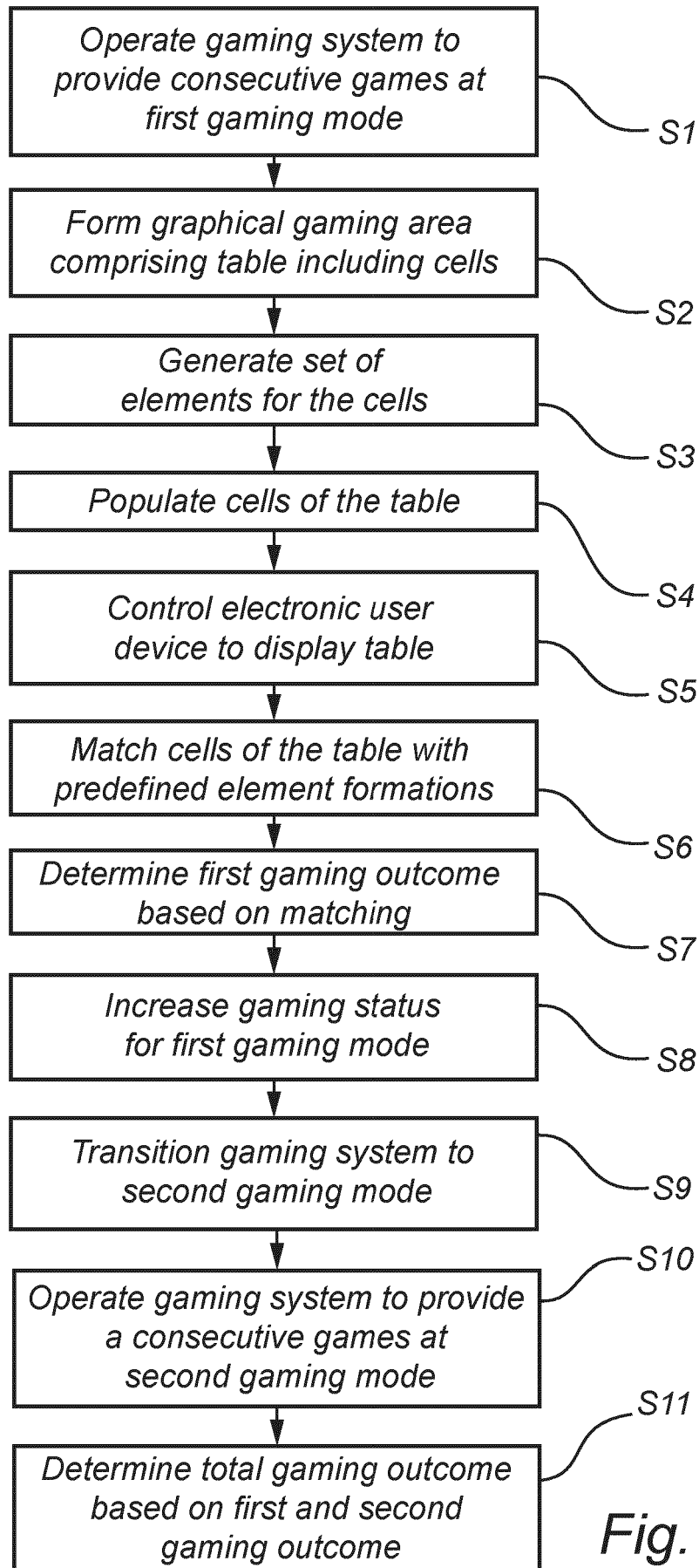


Fig. 5G

**Fig. 6**



EUROPEAN SEARCH REPORT

Application Number

EP 24 21 3616

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2011/028202 A1 (NAICKER THEO [ZA] ET AL) 3 February 2011 (2011-02-03) * abstract * * paragraph [0022] - paragraph [0064] * * figures 1,11,12 *	1-15	INV. G07F17/32
X	US 2020/043280 A1 (WALSH KEVIN RAYMOND [US] ET AL) 6 February 2020 (2020-02-06) * abstract * * paragraph [0019] * * paragraph [0039] * * paragraph [0054] - paragraph [0066] *	1-15	
X	EP 4 242 994 A1 (PLAYN GO MARKS LTD [MT]) 13 September 2023 (2023-09-13) * the whole document *	1-15	
			TECHNICAL FIELDS SEARCHED (IPC)
			G07F
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		31 March 2025	Diepstraten, Marc
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EP 24 21 3616

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31 - 03 - 2025

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2011028202 A1	03-02-2011	AU 2010202429 A1	17-02-2011
		CA 2709476 A1	29-01-2011
		EP 2284811 A1	16-02-2011
		US 2011028202 A1	03-02-2011

US 2020043280 A1	06-02-2020	AU 2019210488 A1	20-02-2020
		US 2020043280 A1	06-02-2020

EP 4242994 A1	13-09-2023	CA 3191104 A1	09-09-2023
		EP 4242994 A1	13-09-2023
		US 2023290214 A1	14-09-2023

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