(19) **United States**

(12) **Patent Application Publication** (10) Pub. No.: **US 2007/0210517 A1**
    Garal   (43) Pub. Date: **Sep. 13, 2007**

(54) **FAIR BACKGAMMON**

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Publication Classification

(57)   **ABSTRACT**

The invention comprises numerous aspects for organizing a fair backgammon tournament. For this purpose, there is proposed a mat with a detection device as well as presentation and/or network connecting apparatus optionally connected thereto. The invention moreover proposes a plurality of methods for carrying out a commercial tournament. For converting a conventional board, an insertion plate system is moreover presented. The invention may also be used for other board games. Further, a method of generating random numbers on a higher logic level is presented.

FAIR BACKGAMMON

[0001] The invention relates to a backgammon mat, a presentation apparatus with a data connection to such a backgammon board, a network connecting apparatus with data connection to such a board, a bridge for supplying a detection device, a method for carrying out a commercial backgammon contest and a commercial competitive tournament, a method for generating random numbers as well as an insertion plate system for a backgammon board.

[0002] Worldwide, one hundred million people play various entertaining games every day. About one tenth thereof play backgammon on a daily basis. About one tenth of the backgammon players play regularly in backgammon tournaments. One tenth again of these are professional players that earn their living in whole or at least in part by taking part in backgammon tournaments. There are about 200 great, famous backgammon tournaments attracting at least 100 participants each.

[0003] Backgammon is a strategy game in which, depending on the roll scores, the players are confronted with the task of spontaneously changing their strategy. For training the strategy, there exist computer games for human players to play against a computer opponent. However such systems are only suited for training and cannot, for course, be utilized on tournaments. Such type backgammon computers are sold by SAITEK, SCHNEIDER and other manufacturers some of which are unknown.

[0004] Generally, numerous electronic devices for use in entertaining games or board games or suggested for backgammon have been proposed. U.S. Pat. No. 5,791,648 for example discloses an inductive sensory system for example for detecting the movements of chess pieces. A similar system is also suggested in U.S. Pat. No. 5,129,654. U.S. Pat. No. 6,297,811 B1 makes diverse proposals as to the possibilities of a touch-sensitive display screen. U.S. Pat. No. 5,188,368 shows an electronic game apparatus for determining the position and identity of chess pieces. A similar apparatus, this time however with high-frequency coils in the play area, is suggested by U.S. Pat. No. 5,082, 286. The chess board of U.S. Pat. No. 6,168,158 B1 also works with high-frequency coils. The German document DE 198 56 408 A1 discloses a capacitive sensor system. The document DE 199 39 159 A1 shows another touch-sensitive capacitive sensor matrix area. The document DE 196 25 771 A1 proposes to generate the roll score for playing backgammon by means of random number generators. A sensor receiving mechanics for a touch-sensitive plate is disclosed in the document DE 94 04 488 U1. The document BG 62241 B1 generally deals with a game table. U.S. Pat. No. 4,355, 812 proposes a stack of cards for replacing mechanical dice. Finally, U.S. Pat. No. 6,220,594 B1 discloses a sensor system it says is suited to detect the final position of a conventional but inside specially equipped die and that has stopped rolling.

[0005] From the simple fact that in commercial backgammon tournaments large amounts of money are at stake and that the players play the game professionally it is apparent that all these electronic devices will not be utilized in such a tournament. Instead, both the players and the organizers attach much importance on using conventional dice for throwing the dice. Therefore, in such tournaments, backgammon mats or boards are only used for two players playing against each other with mechanical dice.

[0006] This of course presents the disadvantage that the discrete games cannot be electronically reconstructed. Therefore, in accordance with one aspect, the invention proposes to provide a conventional backgammon mat with a device for electronically detecting pieces that have been manually positioned, moved and/or taken off the board.

[0007] The great advantage of such a mat is that the players may continue to roll conventional dice and that there is no arithmetic-logic unit provided on the mat for indicating for example the best possible next move. Only the moves the players made are detected electronically and can then be transmitted further and/or processed.

[0008] Electronic detection can be performed using a special mat or video or image acquisition with a pattern recognition software. Hereby, the software may either detect the position of the pieces only or the dice roll as well in order to make them electronically available for evaluating the game.

[0009] It is suggested that the detection device be capable of detecting the actual position of all pieces placed on the mat in accordance with the rules. Thus, each actual game situation can be detected and processed.

[0010] The detection device can localize the pieces in the game through a space leaving detection means and a space entering detection means. Pressure sensors disposed on the space may for example serve this purpose. In this case the player would have to briefly press onto the piece he wants to move before removing it from a space and to again briefly press thereon as he places it onto another space.

[0011] As an alternative and in addition to such localization, the detection device may also localize the pieces in the game by a space occupation detection means. Capacitive sensors may serve this purpose. A particularly simple means to achieve this is to provide light sensors on the spaces of the backgammon mat. These may be provided in a particularly economical way on the mat on each space in a linear arrangement with spaces between them corresponding to the usual size of the pieces. Six light sensors on one space will suffice for most of the playstations.

[0012] In case there are more pieces on one space than the sensors are capable of detecting, the invention suggests that the detection device comprises means for indicating multiple occupancy. These are preferred to be a "+"-key next to the associated space. In order for the detection device not to have to distinguish the differently coloured pieces of the players in its sensor technology, which would have to be a costly one in this case, it is suggested that means for the players to indicate a change of player be provided on the backgammon mat. Such a means for indicating a change of player may for example be a press button each player has to actuate once he has completed a move. If such a press button is used in the right way, the detection device can assume that all of the pieces that are actively moved during the move of one player are of one colour and are thus to be associated with this player.

[0013] For safety reasons, an acceptance request may be provided for the opponent to confirm the correctness of each entry entered by the player into the detection device with the possibility of correcting said entry if this confirmation is not given or for the detection device to ignore the data or signal this lack of confirmation to the tournament direction as a conflict situation.

[0014] The detection device may preferably comprise means for indicating a double dice roll. Otherwise, the detection device is not capable of understanding why one player makes several moves without the other player taking his turn. It also makes it possible to infer the dice rolls from a players moves that have been electronically detected, transmitted and/or stored by the detection device. The indication of a double dice roll may for example be an entry that is subject to acceptance by the opponent.

[0015] The once detected data are preferably committed in a memory that saves the data at least until after the end of the game. As an alternative and in addition thereto, there may be provided an emitter for transmitting the game situations and/or the various moves to a separate receiver. Said receiver may be connected to an own, sometimes larger memory or to a display such as a big-screen. Other output means may also be provided: a simple printer for recording the game on paper by means of a suited coding may for example be used. This allows the players to analyze the game with particularly simple means once the game is over. The printer may for example also be disposed immediately on the backgammon mat. The same applies for a USB memory stick and/or a CD.

[0016] In the concrete implementation, the backgammon mat may for example comprise a coloured marking of the spaces so that players that are familiar with the rules are allowed to position and move their pieces directly on the mat. It may however be more universal and lower in cost to configure the backgammon mat to be transparent and suited for being placed onto a coloured space marking of a board. Such a mat may for example be a foil that can be rolled up and has optical sensors embedded therein. Such a mat can be manufactured at a particularly low cost and be readily used on numerous boards, even on old ones.

[0017] For reasons of safety for the tournament organizer, it is proposed that for use in a tournament the detection device switches off automatically as soon as a preset distance to a central receiver is exceeded. This makes it certain that no mats will get lost in a tournament—which often takes place under quite confusing conditions.

[0018] If the backgammon mat with the detection device is supplied with electrical energy from an external connectable device, the detection device may be configured to be particularly small and discreet. Moreover, the external device may for example be rechargeable and replaceable at low cost once its recharge capability has significantly diminished. Moreover, a separate assembly may be used for this purpose, said assembly serving to simultaneously indicate the time needed hereto before and the time each player still has. The time left is a decisive factor for planning the moves ahead of time during a game. Also, in a separate device there can be readily accommodated quite large a memory.

[0019] For the tournament organizer, it is particularly advantageous to have a presentation apparatus having a data connection to at least one backgammon mat equipped as proposed and presenting game situations, preferably in oversize graphic. This allows for example a game or several games to be made accessible to a public on one or several big screens. This presentation may be commented there by experienced players.

[0020] As an alternative and in addition thereto, there may be provided a network connecting apparatus that has the data

of at least one backgammon mat of the invention and that electronically transmits the game situations to an electronic network, more specifically to the internet. This makes it possible to watch tournament games live in the internet.

[0021] Due to the large number of backgammon players worldwide, there exist just as many conventional backgammon boards. These usually are divided into two tables with each table comprising a play surface and a surrounding, upright frame. In order to provide the possibility to use the invention on these backgammon boards as well, an insertion plate system with two plates for insertion into the game surface of a conventional board and with a device for electronically detecting pieces that have been manually positioned, moved and/or taken off the board is proposed.

[0022] Since usually the two tables are placed with their longitudinal borders adjoining so that the upright frame is doubled in the center of the overall game board, there is proposed a data and/or energy bridge for connecting the two insertion plates beyond the adjacent frames of the game board. These may for example be means with data and plug-type connections on the insertion plates.

[0023] To enter data, the insertion plate system may preferably comprise a second bridge to one player side of the backgammon board. At this second bridge, the player may for example enter that the other player is taking his turn. There may also be provided a key by means of which an opponent may accept or refuse the entry of a player. Alternatively, the bridge can be connectable or connected to a data entry unit so that the players may enter the data through the data entry unit.

[0024] In a particularly preferred embodiment, an insertion plate system of the type proposed comprises a bridge to a timer and registration unit. This unit may show the players the time spent and/or left and internally store the moves and situations of the game. It may moreover supply the system with energy.

[0025] In order to allow for playing without board as well, it is proposed to configure a data bridge in the form of a play surface frame or at least as a part of a play surface frame. Thus, the otherwise frameless backgammon mat can be surrounded with the data bridge so that a space in which to play and to throw the dice is directly created. Then, the data can be entered through the play surface frame. This allows not only a particular compact but also a very low cost construction of the system.

[0026] Irrespective of what has been mentioned herein above, there is proposed a method for carrying out a commercial backgammon contest which faces two players against each other, said players playing a predetermined number of games with an end result for this meeting being determined from this number of games. In accordance with an aspect of the invention, the two opponents have to alternately start the various games.

[0027] Hereto before, which player starts the next game is decided randomly at the start of each game. The alternate start allows for very fair a contest.

[0028] Which player starts in the respective first game of two thus coupled games may for example be determined by generating the dice roll at the start of the game, with the two players each throwing one die. The player with the highest

roll goes first. He is allocated the roll score he would have obtained if he had thrown the two dice in this form.

[0029] In order to achieve equal opportunities for the two players, it is proposed that the second player starts the second game with the dice roll with which his opponent started the first game. He needs not position the same pieces of course. But the same roll score at the beginning of the game allows for equal opportunities.

[0030] Just as there exist individual tournaments there also exist team tournaments facing players of two teams playing simultaneous games. During such a team tournament, there is proposed that a dice roll of a player (using white pieces) of the first team is also binding for a player (also using white pieces) of the second team. This permits to achieve equal opportunities for the two teams during the entire match. If for example, in a game against an opponent of the second team, the player (using white pieces) of the first team throws a "six-five", this gives him certain possibilities to move his pieces. In accordance with the proposal, the roll of this player of the first team would automatically give the player (using the white pieces) of the second team the same possibilities to move his pieces. Meaning, this player of the second team will pretend to also have obtained "six-five" as a result of throwing his die. Moreover, throwing the dice in the first game dispenses with the need to throw the dice in the second game.

[0031] The same aspect of the invention may also be used in a commercial backgammon contest in which one player either faces a second or a second and a third player in two simultaneous games. In this case, the player uses white pieces in a first game and black pieces in a second game. He either faces an opponent that also plays different colours or one opponent in the first game and one opponent in the second game that of course use different colours to play against him. For such type games it is proposed that all dice rolls of the first game be also binding for the second game.

[0032] The same aspect of the invention may also be used for a special backgammon competitive tournament in which all the players using white pieces receive one single dice combination and that all the players using black pieces also receive only one (but different) dice combination. The goal is to achieve the best end result for the game from an existing number of dice combinations available for all players during one game.

[0033] In practice, a dice roll is generated centrally several times, with one roll score always applying for the one colour and the next roll score for the other colour. The players of all the simultaneous games do not throw the dice themselves but retrieve the next roll after each move in order to continue playing. It is understood that the players will be given the next roll score only after a move. Thus, all the players play with the same score sequence.

[0034] For game servers using various soft—and/or hardware, it is often very important that a very transparent, clear and understandable and, as a result thereof, controllable method for generating random numbers be provided. In the case of backgammon, the random numbers can more specifically be used to dictate roll scores.

[0035] Not only in backgammon, also in other commercial fields such as in casinos and lottery events, it is important that random numbers be produced in a transparent, under-

standable way so that those that are dependent on the randomity of the random numbers will not get the wrong impression that the numbers were perhaps known beforehand.

[0036] In order to guarantee the neutrality and authenticity of random numbers, it is proposed that, in order to produce a random number for their respective local users, decentral clients access a central random server constantly generating and publishing random numbers. Upon request, the clients receive from the random server the random number it just generated. The random number is transmitted, provided with a marking.

[0037] This marking may for example be sequential numbers or another unambiguous marking of the random number generated by the random server. The marking preferably is an indication of the time at which the client accessed the random server and/or at which the random number was generated.

[0038] It is obvious that other markings such as colour markings or combinations of the marking types mentioned may be used in order to configure the scanned random numbers to be identifiable in such a manner that they may be found in the list of the generated random numbers published by the random server and may thus be verified.

[0039] Of one advantage among others, this method allows all the clients participating in the process such as casinos or lottery enterprises to further use their existing soft- and/or hardware to constantly generate a series of random numbers at a known time interval. It is preferred that the random server has a special software in order to carry out the necessary operations with the random numbers of the clients or with autarkical generation thereof and to generate its central series of random numbers in such a manner that the random number can be retrieved, meaning published, at a concrete time. The result of the generated random numbers of the random server is published in its entirety and is available for scanning at any time so that each user may access to the list of the random server on the clients and may thus check whether the supposedly random number obtained from the client has indeed been dictated by the neutral random server. The exact time, for example indicating the milliseconds, at which the random number has been generated by the random server, is very helpful to find the number.

[0040] Inasmuch, this method prevents any deceitful manipulation of the random numbers since neutral control of all the random numbers is possible at the random server.

1. A backgammon mat for only two players playing against each other with dice, comprising a device for electronically detecting pieces that have been manually positioned, moved and/or taken off the board.

2. The mat as set forth in claim 1, wherein the detection device recognizes the actual position of all pieces placed on the mat in accordance with the rules.

3. The mat as set forth in claim 1, wherein the detection device localizes the pieces in the game through a space leaving detection means and a space entering detection means.

4. The mat as set forth in claim 3, comprising a pressure sensor provided on mat spaces.

5. The mat as set forth in claim 1, wherein the detection device localizes the pieces in the game through a space occupation detection means.

6. The mat as set forth in claim 5, wherein light sensors are provided on mat spaces.

7. The mat as set forth in claim 1, comprising a means for the players to inform the detection device that another player has taken his turn.

8. The mat as set forth in claim 1, comprising an acceptance request.

9. The mat as set forth in claim 1, comprising a means for the players to indicate a double dice roll to the detection device.

10. The mat as set forth in claim 1, comprising a memory to which all the game situations can be committed beyond the end of the game and/or a transmitter for sending the game situations to a separate receiver.

11. The mat as set forth in claim 1, comprising an output means on the detection device and/or coupled to a separate receiver.

12. The mat as set forth in claim 1, comprising colored space marking.

13. The mat as set forth in claim 1, wherein the mat is transparent and suited to be placed onto a colored space marking of a board.

14. The mat as set forth in claim 1, wherein the detection device automatically switches off when a settable distance from a central receiver is exceeded.

15. The mat as set forth in claim 1, comprising an external connectable device for supplying the detection device with electrical energy.

16. The mat as set forth in claim 15, wherein the external device comprises a memory and/or indicates the time already measured or the time still left.

17. A presentation apparatus that is provided via a data connection with at least one backgammon mat as set forth in claim 1, and that presents game situations, preferably in oversize graphic.

18. A network connecting apparatus that is provided, via a data connection, with at least one backgammon mat as set forth in claim 1, and electronically transmits game situations to an electronic network, more specifically to the internet.

19. A method for carrying out a commercial backgammon contest, wherein game situations of at least one backgammon mat—preferably as set forth in claim 1, —are electronically detected by said mat and transmitted to a tournament director, said tournament director graphically presenting and/or storing and/or transmitting the game situations to a network, more specifically to the internet.

20. An insertion plate system for a backgammon board divided into two tables, with each table comprising a play surface and a surrounding, upright frame and said insertion plate system comprising two insertion plates for insertion onto the play surfaces of the backgammon board and a device for electronically detecting pieces that have been manually positioned, moved and/or taken off the board.

21. The insertion plate system as set forth in claim 20, comprising a data and/or energy bridge for connecting the insertion plates beyond the adjacent frames of the backgammon board.

22. The insertion plate system as set forth in claim 20, comprising a second bridge to a player side of the backgammon board for the player to enter data indicating that the other player is taking his turn or for connecting a data entry unit.

23. The insertion plate system as set forth in claim 20, comprising a third bridge to a timer and registration unit.

24. A bridge for supplying a detection device for electronically detecting pieces that have been manually positioned, moved and/or taken off the board during a backgammon game in the form of a play surface frame or of at least part of a play surface frame of a backgammon board.

25. A method for carrying out a commercial backgammon contest which faces two players against each other, said players playing a predetermined number of games with an end result for this meeting being determined from said number of games, wherein the two players have to alternately start the various games.

26. The method as set forth in claim 25, wherein at the beginning of the first game each player generates a dice roll by throwing one die.

27. The method as set forth in claim 25, wherein in the second game the player starts with the same dice roll as his opponent in the first game.

28. The method as set forth in claim 25, wherein to start the game, a new dice roll is generated before every odd game only.

29. A method for carrying out a team tournament facing players of two teams playing simultaneous games, wherein a dice roll for one player using white pieces of the first team is also binding for a player using white pieces of the second team in his game.

30. A method for carrying out a backgammon contest in which one player either faces a second or a second and a third player in two simultaneous games, wherein all the dice rolls of the first game are also binding for the second game.

31. A method for carrying a special backgammon competitive tournament in which all the players using white pieces receive one single dice combination and that all the players using black pieces also receive only one (either same or different) dice combination, wherein the best end result of the game is to be virtually achieved from an existing number of dice combinations available for all players during one game.

32. A method for regularly generating random numbers on a client, said client being connected via a network to a central random server and said random server regularly, preferably permanently, generating random numbers and making these random number available for the clients to retrieve them, wherein all of the random numbers the random server has generated are transmitted to the client in such a manner that a marking provided on the random number makes it possible to clearly identify said random number and that the random numbers generated by said random server are stored in such a manner that they can be found by means of said transmitted marking.

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