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(54) **POLAR COORDINATE BOARD GAME AND METHOD OF PLAY**

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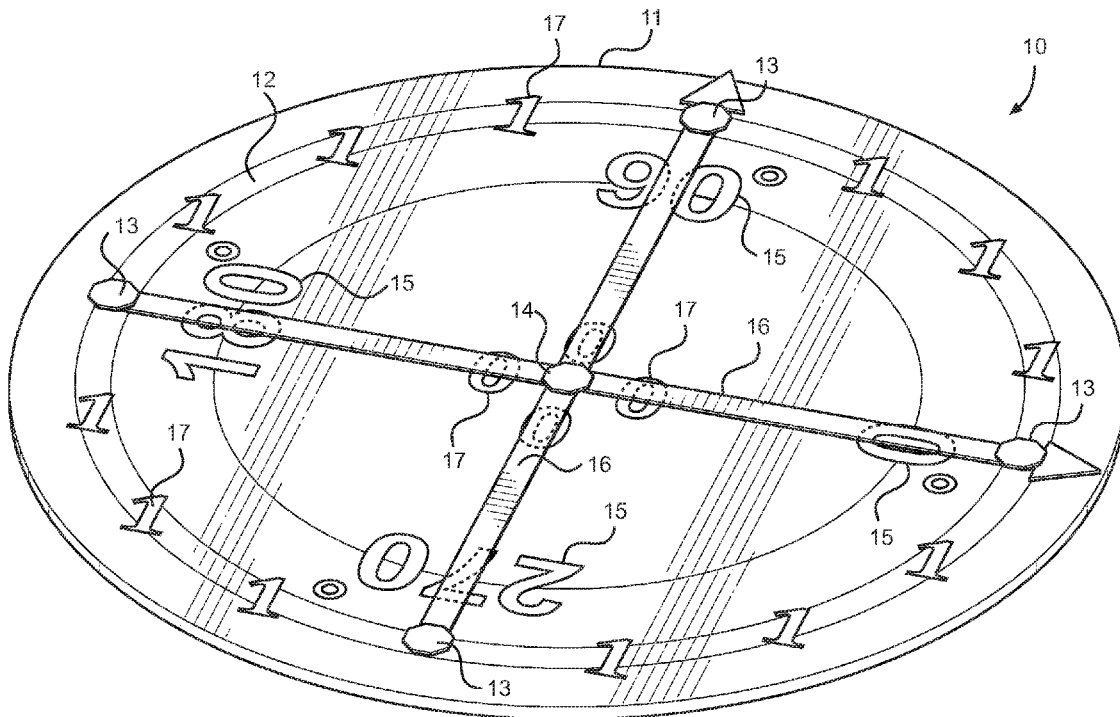(22) Filed: **Jul. 10, 2017**

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(57) **ABSTRACT**

A board game and method of play. The board game includes a plurality of game boards each having a circular path thereon, each of the circular paths having a plurality of angle spaces each corresponding to an angle between zero and three hundred sixty degrees, and a central space disposed on a center of each game board. Each player has a number of uniquely colored tokens. A first die is configured to provide an outcome of either one or zero when rolled, and a second die is configured to provide an outcome between zero and three hundred sixty when rolled. The method of play includes rolling each die and placing a token on a space corresponding to the outcome of each die roll. The game ends when one player aligns three tokens on a majority of the game boards.
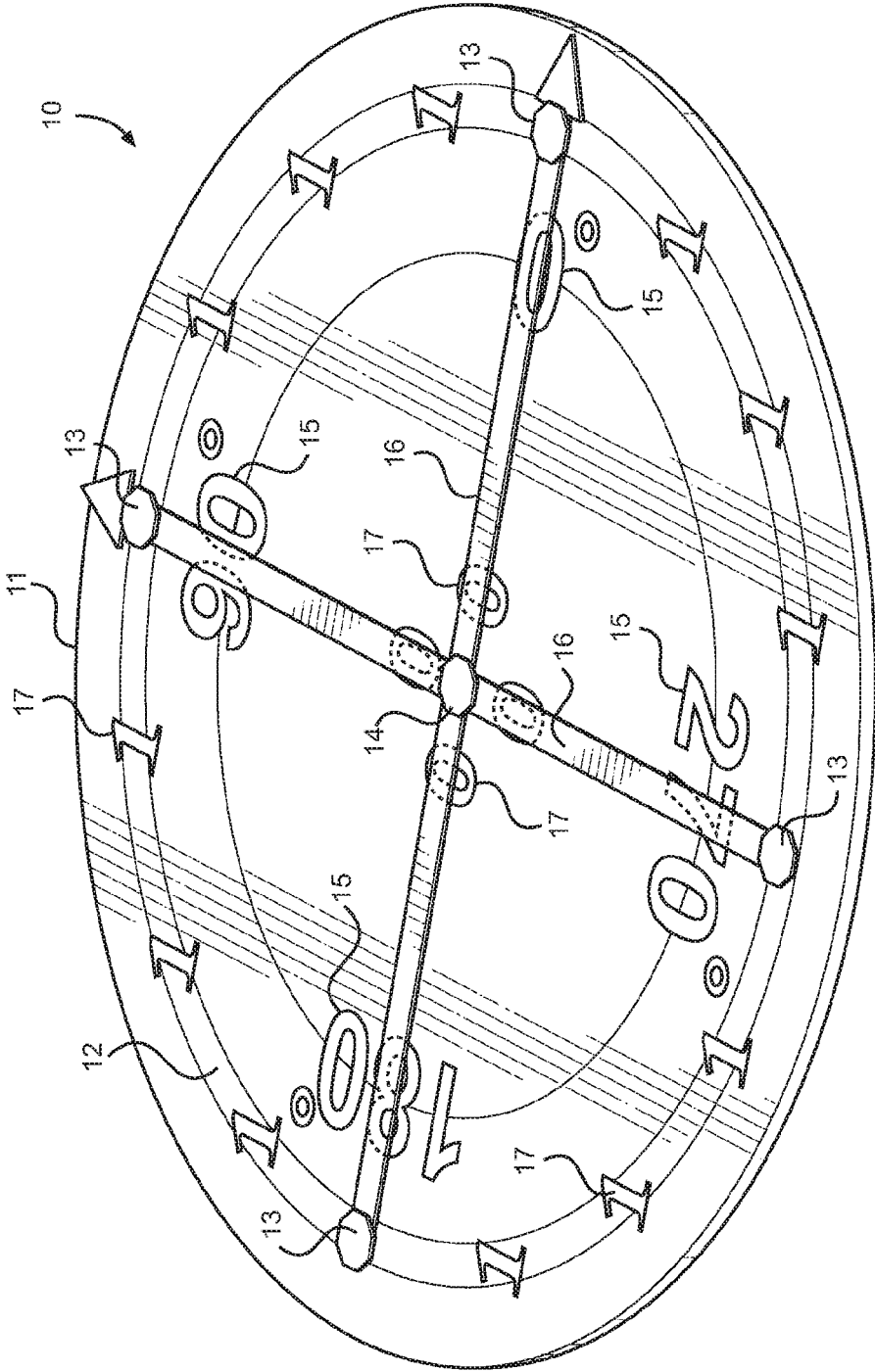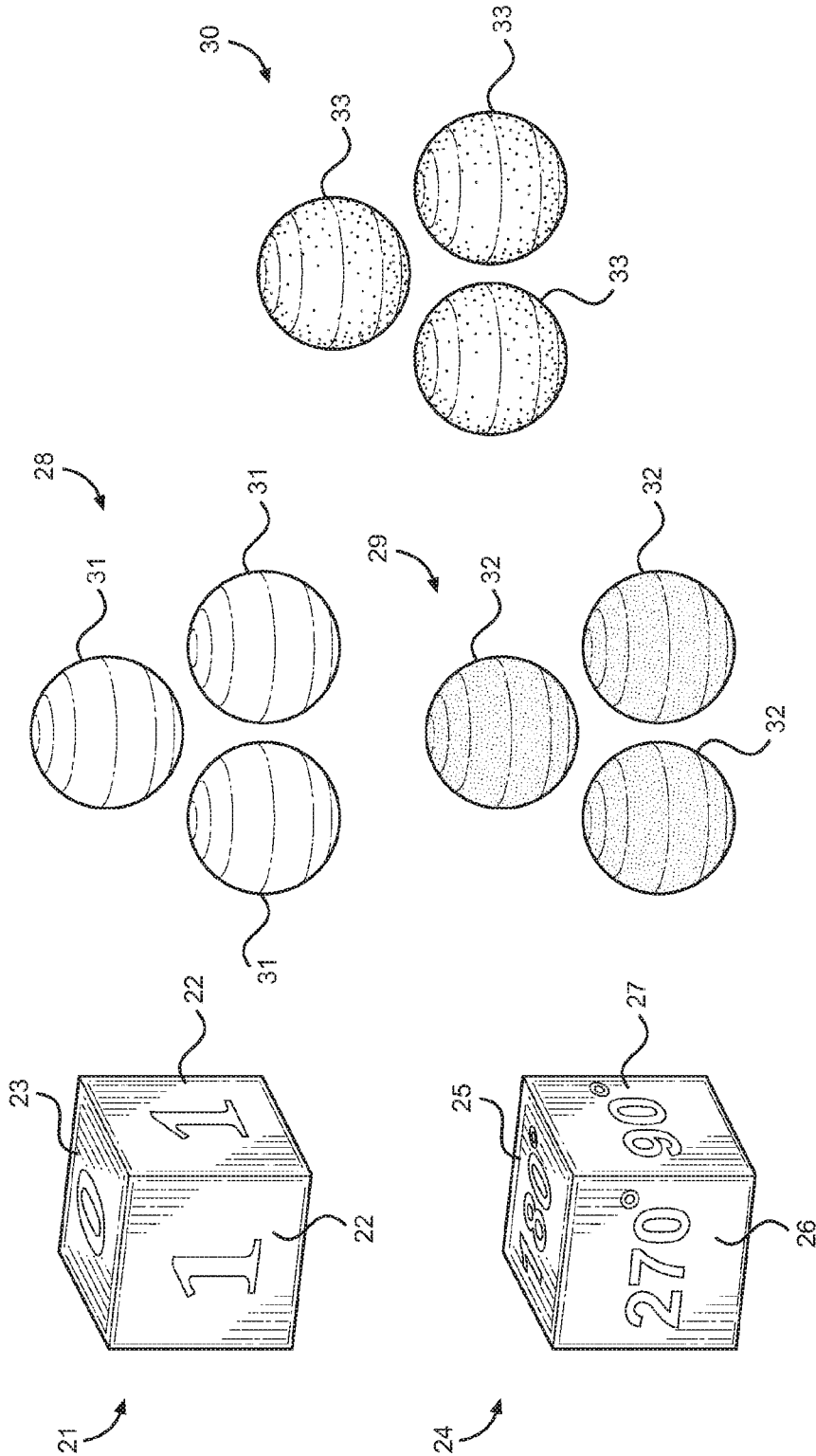
FIG. 1

FIG. 2

FIG. 3

PROVIDING A PLURALITY
OF GAME BOARDS — 51

PROVIDING EACH PLAYER
WITH A SET OF TOKENS — 52

ROLLING A FIRST DIE — 53

DIE LANDS
ON ONE? — 54

NO

LANDED ON
ZERO, IS CENTRAL
SPACE OPEN? — 55

NO

YES

ROLLING A
SECOND DIE — 57

YES

PLACE TOKEN
ON CENTRAL
SPACE — 56

DIE LANDS ON ANGLE
CORRESPONDING TO
OCCUPIED SPACE? — 58

NO

PLACE TOKEN
ON SPACE
CORRESPONDING
TO ANGLE — 59

DOES PLAYER
HAVE 3 CONSECUTIVE
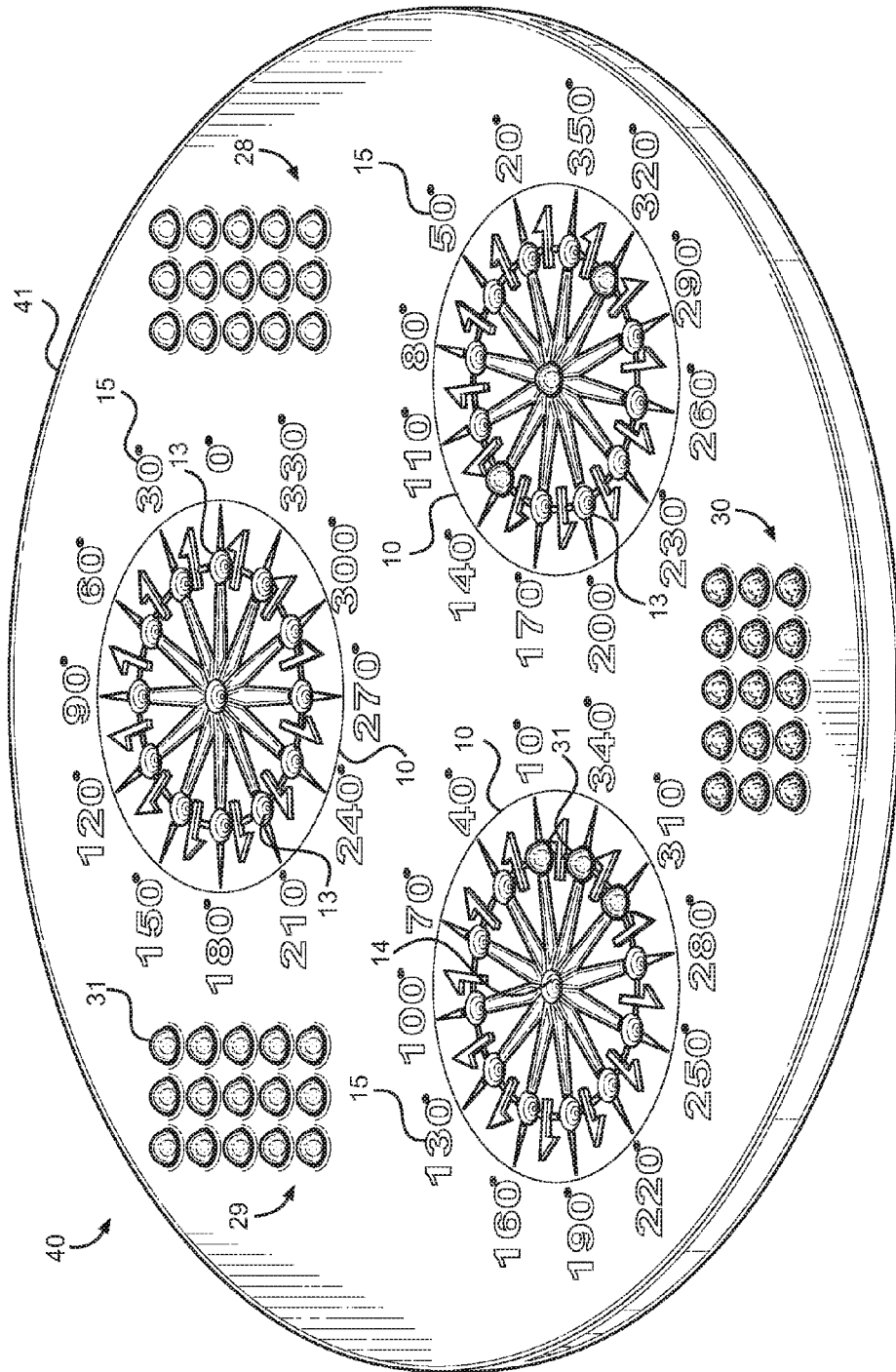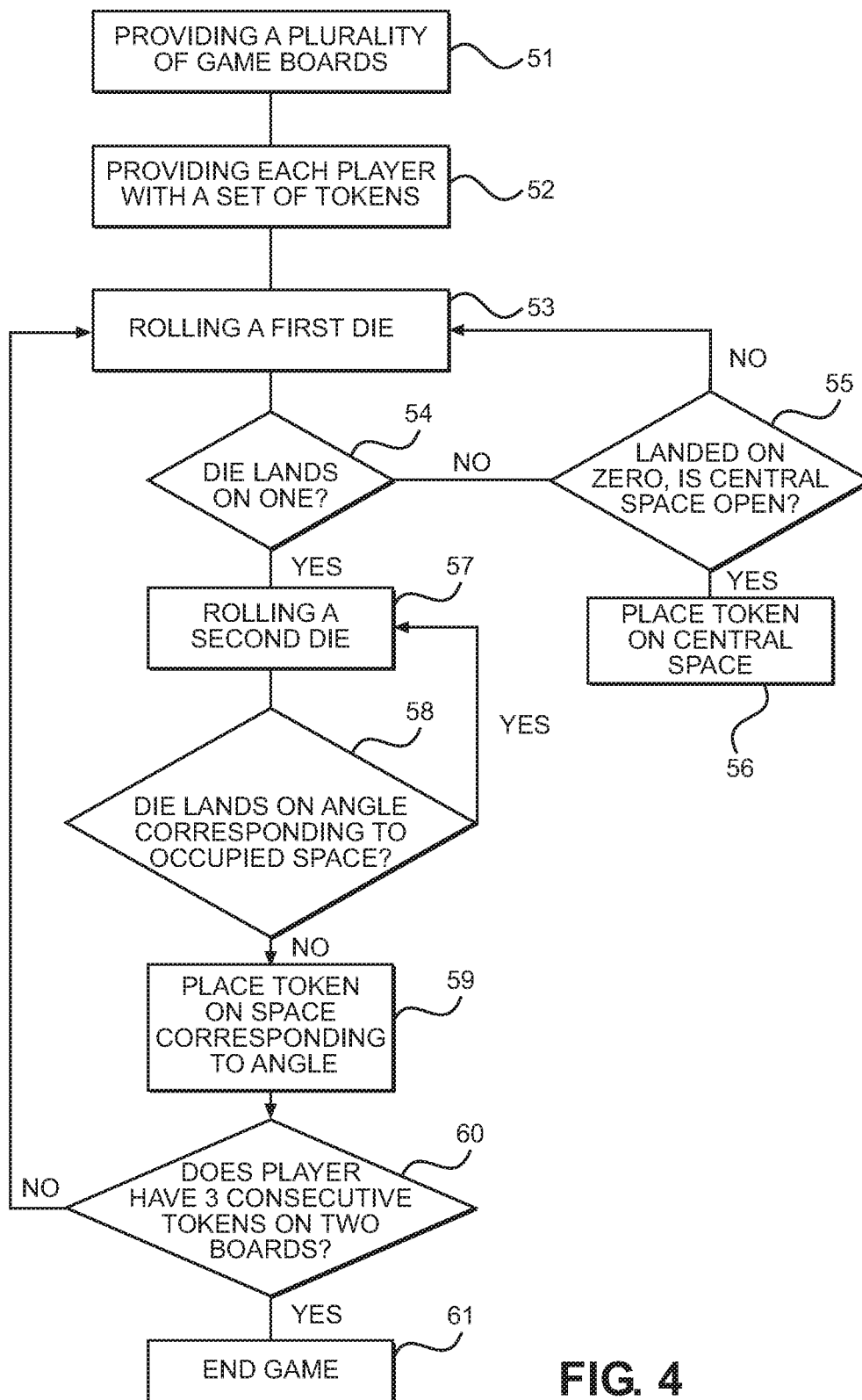TOKENS ON TWO
BOARDS? — 60

NO

YES — 61

END GAME

FIG. 4

POLAR COORDINATE BOARD GAME AND METHOD OF PLAY

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Application No. 62/360,046 filed on Jul. 8, 2016 and U.S. Provisional Application No. 62/362,271 filed on Jul. 14, 2016. The above identified patent applications are herein incorporated by reference in their entirety to provide continuity of disclosure.

FIELD OF THE INVENTION

[0002] The present invention relates to board games. More specifically, the present invention provides a board game upon which tokens are placed based upon the outcome of different dice rolls.

BACKGROUND OF THE INVENTION

[0003] Many individuals enjoy playing board games for recreational purposes. Board games can be a fun and memorable experience for those that play. One drawback to some board games is that they lack any educational aspects. Board games can be designed to teach individuals various mathematical concepts or other useful skills. Some games such as tic-tac-toe teach concepts such as shapes and taking turns, but such a game is simple and can become boring quickly. Some individuals may resort to playing digital games by themselves, which may lead to isolation from friends and family for extended periods. It is particularly important for individuals such as young children to learn the concepts of probability, angles, polar coordinates, and the like. It is equally important for children to learn to interact with one another, particularly in a rule-based setting. In view of the above, it is therefore desirable to provide a board game and method of play that educates players about important real-world concepts.

SUMMARY OF THE INVENTION

[0004] In view of the foregoing disadvantages inherent in the known types of board games now present in the prior art, the present invention provides a board game and method of play wherein the same can be utilized for providing convenience for the user when playing a board game that teaches players about probability, polar coordinates, angles, and other mathematical concepts.

[0005] The present board game comprises a plurality of game boards each having a circular path thereon, each of the circular paths having a plurality of angle spaces each corresponding to an angle between zero and three hundred sixty degrees. A central space is disposed on a center of each game board. A plurality of token groups are provided, wherein each token group comprises a plurality of tokens of a same unique color. A first die is configured to provide an outcome of either one or zero when rolled, and a second die is configured to provide an outcome between zero and three hundred sixty when rolled.

[0006] A method of playing the polar coordinates game includes providing a plurality of game boards each having a central space disposed on a center thereof, each game board having a circular path thereon, each of the circular paths having a plurality of angle spaces, wherein each angle space corresponds to an angle between zero and three hundred

sixty degrees, providing an individual player of a plurality of players with a token group, wherein each token group includes a plurality of tokens of a same unique color, and rolling a first die configured to provide an outcome of either one or zero. If the outcome from rolling the first die is zero and the central space is unoccupied, then the player places a token on the central space. If the outcome from rolling the first die is one, then rolling a second dice configured to provide an outcome between zero and three hundred sixty when rolled, then the player places a token on the angle space corresponding to the outcome provided by rolling the second die. The game ends when a player has placed three tokens in consecutive spaces on a majority of the game boards.

[0007] Other objects, features, and advantages of the present invention will become apparent from the following detailed description taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] Although the characteristic features of this invention will be particularly pointed out in the claims, the invention itself and manner in which it may be made and used may be better understood after a review of the following description, taken in connection with the accompanying drawings wherein like numeral annotations are provided throughout.

[0009] FIG. 1 shows a perspective view of a game board of the polar coordinate game.

[0010] FIG. 2 shows a perspective view of the die and token components of the polar coordinate game.

[0011] FIG. 3 shows a perspective view of multiple game boards of the polar coordinate game.

[0012] FIG. 4 shows a flowchart of a method of playing the polar coordinate game.

DETAILED DESCRIPTION OF THE INVENTION

[0013] Reference is made herein to the attached drawings. Like reference numerals are used throughout the drawings to depict like or similar elements of the board game and method of play. For the purposes of presenting a brief and clear description of the present invention, the preferred embodiment will be discussed as used for providing a board game that introduces players to various mathematical concepts. The figures are intended for representative purposes only and should not be considered to be limiting in any respect.

[0014] Referring now to FIG. 1, there is shown a perspective view of a game board of the polar coordinate game. The game includes a plurality of game boards 10 each having a perimeter 11, which is circular in the shown embodiment but may be other shapes in alternate embodiments. FIG. 1 illustrates a single game board 10. However, the game is played with multiple game boards 10, and is particularly played with three game boards 10 in one embodiment.

[0015] Each game board 10 comprises a circular path 12 having a plurality of angle spaces 13 thereon that correspond to an angle between zero and three hundred sixty degrees. In the shown embodiment, the angle spaces 13 are disposed equidistant from one another along the circular path 12, such that the arc lengths between each angle space 13 are all equal. A central space 14 is disposed on a center point of the

game board **10**, such that the central space **14** is disposed on the center point of the circular path **12**. The game board **10** further includes various indicia thereon that indicates where a player should place their token. A first die indicia **17** indicates where to put the player token if a "1" or "0" is rolled when a first die is thrown. The game board **10** further includes second die indicia **15** which identifies the location along the circular path **12** which a token should be place if that particular angle is an outcome when rolling a second die.

[0016] Referring now to FIG. **2** there is shown a perspective view of the dice and token components of the polar coordinate game. The game is played with at least a first die **21** and a second die **24**. The first and second dice **21, 24** are shown as typically cube-shaped dice. However, no claim is made as to the shape of the dice, and any structure of the dice that allows for different faces having different values may be utilized.

[0017] The first die **21** is configured to provide an outcome of either "1" or "0" when rolled. However, the first die **21** is further configured to provide greater odds that a "1" will be rolled. In order to accomplish this, the first die **21** has one "0" face **23** and a plurality of "1" faces **22**. However, alternate embodiments of the first die **21** may have different numbers of "0" and "1" faces **23, 22**, as long as there remains a greater number of "1" faces **22** than "0" faces **23**.

[0018] The second die **24** is configured to provide an outcome of an angle between zero and three hundred sixty degrees when rolled. In the shown embodiment, the second die **24** includes a "90 degree" face **27**, a "180 degree" face **25**, and a "270 degree" face **26**. However, other angle values may be shown on the individual faces of the second die **24**. Further, the game may be played with multiple second dice **24**, such that each second die **24** includes different angle values thereon.

[0019] The game can be played with multiple players, and each player is given a token group to use as their game pieces. In one embodiment, the game includes a first token group **28**, a second token group **29**, and a third token group **30**. The individual tokens **31** of the first group **28** include a first color or design, the individual tokens **32** of the second token group **29** include a second color or design, and the individual tokens **33** of the third token group **30** include a third color or design. In this way, individual players can easily identify their particular tokens during gameplay.

[0020] Referring now to FIG. **3** there is shown a perspective view of multiple game boards of the polar coordinate game. In the shown embodiment, the game includes a large base **40** having multiple game boards **10** thereon. The base **40** is shown with a circular perimeter **41**, however other perimeter shapes **41** may be utilized, such as rectangular or triangular. The base **40** may further include indented spaces for storing unused tokens from the first, second, and third groups of tokens **28, 29, 30**. Similarly, each angle space **13** and the central space **14** may comprise indentations sized to receive an individual token **31** therein, so that the token **31** is not accidentally moved from its proper place when the game is being played. Other embodiments of the invention may include any combination of board games **10**, which may be arranged in any pattern. Further, the base **40** is represented here as a planar base. The base can be a three-dimensional object such as a cube, a sphere, or the like, and different game boards **10** can be situated on different sides of the three-dimensional object. The base **40** can also be a

typical object such as a cup, a bottle, or any three dimensional object upon which one or more game boards **10** can be inscribed.

[0021] Each game board **10** can have distinct angle indicia **15** disposed about the circular path, such that the angle spaces **13** correspond to different angles on each game board **10**. The game is played by rolling the first die and placing a token **31** on either the central space **14** if a "0" is rolled and the central space **14** is unoccupied by another player's token, or on one of the angle spaces **13** if a "1" is rolled. The position along the circular path is determined by rolling the second die, which provides a particular angle value for a corresponding angle space **13**.

[0022] In the shown embodiment, three game boards **10** are disposed on the base **40**, and the game ends when one player places three tokens **31** in a row on two of the three game boards **10**. The winner can have three consecutive tokens **31** along the circular path, or can have three tokens **31** in a row by having one token **31** on the central space **14** and a token **31** on each of the angle spaces **13** on opposing sides of the central space **14**, creating a straight line of three tokens **31** across the game board **10**.

[0023] Referring now to FIG. **4** there is shown a flowchart of a method of playing the polar coordinate game. The method includes a first step of providing **51** a plurality of game boards, which is three game boards in the presently discussed embodiment. A second step includes providing each player with a set of tokens **52**, wherein each set of tokens includes individual tokens of a distinct color or pattern. A third step includes a player rolling **53** a first die, which is configured to provide an outcome of either "1" or "0" when rolled. If the first die lands on zero **55**, the player checks whether the central space is occupied. In one embodiment, if the central space is occupied by another player's token, then the player ends their turn and the next player's turn begins. If, however, the central space is unoccupied, the player places a token on the central space **56**. In the shown embodiment, if the central space is occupied, the player may reroll until they obtain a value corresponding to an unoccupied space.

[0024] If the first die lands on "1", the player then rolls **57** a second die, the second die configured to provide an outcome between zero and three hundred sixty. The player then checks **58** if the angle space on the circular path is occupied. If the angle space is not currently occupied by another player's token, the current player places **59** one of their tokens on the angle space. In one embodiment, if the angle space is occupied by another player's token, then the current player's turn ends and the next player's turn begins. In an alternate embodiment, if the angle space is occupied by another player's token, then the current player rerolls the second die until it lands on an angle corresponding to an unoccupied angle space, after which the player places **59** a token on that space.

[0025] After the player places **59** their token, the player checks to see if they have achieved the win condition **60**. In the illustrated embodiment, multiple win conditions are possible. If the current player has a token on the central space and tokens on angle spaces on opposing sides of the central space on two of the three game boards, then the current player wins and the game ends **61**. If the current player has a token on the central space and tokens on angle spaces on opposing sides of the central space on one of the game boards, and if the current player has a token on three

consecutive angle spaces on another of the game boards, then the game ends **61** and the current player wins. If the current player has a token on three consecutive angle spaces on two of the game boards, then the current player wins and the game ends **61**. If none of the above conditions are true after the player places their token, then that player's turn ends and the next player's turn begins by rolling a first die **53**.

[0026] Alternate embodiments of the polar coordinate game may have alternate win conditions. For example, if the game boards are situated different sides of a three-dimensional object, such as a spherical object or cuboid object, the win condition can be achieved by creating a line of tokens across one of those surfaces, or across multiple surfaces. Other token arrangement and groupings may be considered the win condition. For example, a token arrangement along the radius of a spherical base, or multiple tokens arranged in concentric circles, or parallel token arrangements, or any other known arrangements of tokens may be determined to be the win condition, depending on the size and shape of the game board.

[0027] Another win condition for the game requires the player to 'capture' opponent player pieces. When the current player achieves three consecutive tokens on the game board, the current player can then remove opponent tokens from the game board, and can even remove opponent tokens that have not yet been placed on the game board. Additional rules may govern the maximum number of opponent tokens the current player is permitted to remove from the game board, or the number of opponent tokens that have yet to be played. In this way, the present game may be played with a variety of win conditions in place.

[0028] It is therefore submitted that the instant invention has been shown and described in what is considered to be the most practical and preferred embodiments. It is recognized, however, that departures may be made within the scope of the invention and that obvious modifications will occur to a person skilled in the art. With respect to the above description then, it is to be realized that the optimum dimensional relationships for the parts of the invention, to include variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by the present invention.

[0029] Therefore, the foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

I claim:

1. A board game, comprising:

a plurality of game boards each having a circular path thereon, each of the circular paths having a plurality of angle spaces each corresponding to an angle between zero and three hundred sixty degrees;

a plurality of token groups, wherein each token group comprises a plurality of tokens of a same unique color;

a first die configured to provide an outcome of either one or zero when rolled;

a second die configured to provide an outcome between zero and three hundred sixty when rolled.

2. The board game of claim **1**, further comprising a central space disposed on a center of each game board.

3. The board game of claim **1**, wherein the first die comprises at least one first face having a first indicia thereon, the first indicia comprising a number zero thereon, and a plurality of second faces each comprising a second indicia thereon, the second indicia comprising a number one thereon.

4. The board game of claim **1**, wherein the second die comprises a plurality of faces, wherein each face of the plurality of faces comprises an indicia thereon, wherein the indicia comprises a number value in the range of zero to three hundred sixty.

5. The board game of claim **1**, wherein the plurality of game boards comprises three game boards.

6. The board game of claim **1**, wherein each individual angle space is equidistant from each adjacent angle space.

7. The board game of claim **1**, wherein each game board of the plurality of game boards comprises a circular perimeter.

8. A method for playing a board game, comprising:

providing a plurality of game boards each having a central space disposed on a center thereof, each game board having a circular path thereon, each of the circular paths having a plurality of angle spaces, wherein each angle space corresponds to an angle between zero and three hundred sixty degrees;

providing an individual player of a plurality of players with a token group, wherein each token group includes a plurality of tokens of a same unique color;

rolling a first die configured to provide an outcome of either one or zero;

if the outcome from rolling the first die is zero and the central space is unoccupied, then placing a token on the central space;

if the outcome from rolling the first die is one, then rolling a second dice configured to provide an outcome between zero and three hundred sixty when rolled;

placing a token on the angle space corresponding to the outcome provided by rolling the second die.

9. The method of claim **8**, wherein the first die comprises at least one first face having a first indicia thereon, the first indicia comprising a number zero, and a plurality of second faces each comprising a second indicia thereon, the second indicia comprising a number one.

10. The method of claim **8**, wherein the second die comprises a plurality of faces, wherein each face of the plurality of faces comprises an indicia thereon, wherein the indicia comprises a number value in the range of zero to three hundred sixty.

11. The method of claim **8**, wherein each individual angle space is equidistant from each adjacent angle space.

12. The method of claim **8**, wherein each game board of the plurality of game boards comprises a circular perimeter.

13. The method of claim **8**, further comprising:

if the outcome from rolling the first die is zero and the central space is occupied, then rerolling the first die.

14. The method of claim **8**, further comprising:

if the outcome from rolling the first die is one, and the outcome of rolling the second die is an angle that corresponds to an angle space that is occupied, then rerolling the second die.

15. The method of claim **8**, wherein the plurality of game boards comprises three game boards.

16. The method of claim **15**, further comprising:

if an individual player has a token on the central space and tokens on angle spaces on opposing sides of the central space on two of the game boards, then ending the game.

17. The method of claim **15**, further comprising:

if an individual player has a token on the central space and tokens on angle spaces on opposing sides of the central space on one of the game boards, and if the individual player has a token on three consecutive angle spaces on another of the game boards, then ending the game.

18. The method of claim **15**, further comprising:

if an individual player has a token on three consecutive angle spaces on two of the game boards, then ending the game.

* * * * *