

[54] **BOARD GAME APPARATUS**

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[51] **Int. Cl.**.....A63f 3/02

[58] **Field of Search**.....273/131, 132, 134, 135, 137, 273/142, 155; 35/27

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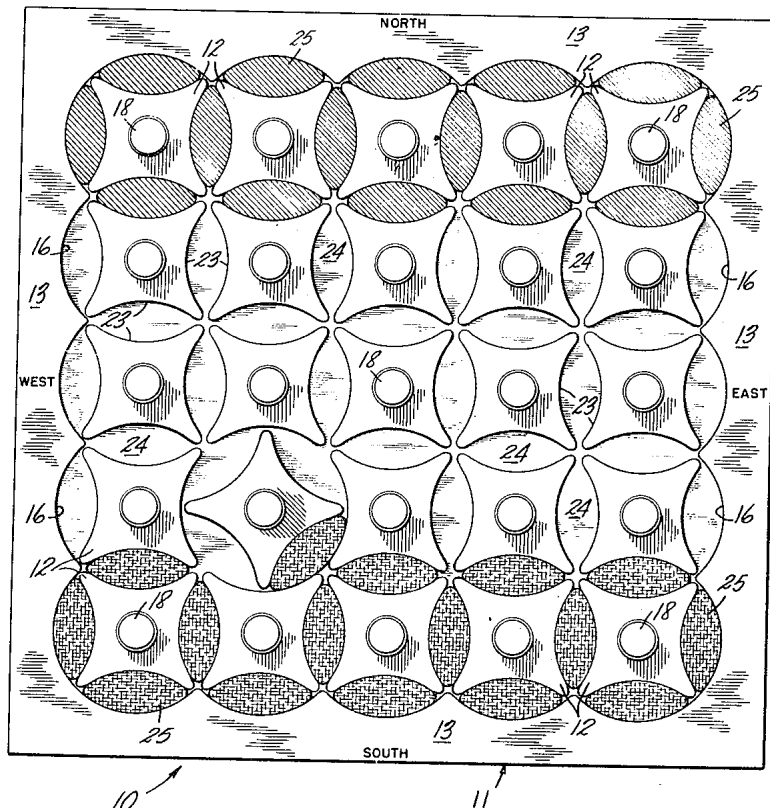
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[57]

**ABSTRACT**

A game apparatus formed by a base, an array of rotators formed to provide elongated spaces and playing pieces in the spaces, enables one or more players to engage in a wide variety of games. The rotators, when positioned in alignment at one of a plurality of angular positions, provide such elongated spaces common to two adjacent rotators to enable movement and transfer of the playing pieces. The basic playing move is accomplished by grasping and turning one of the rotators from one to another of its aligned positions which shifts at least one playing piece out of juxtaposition with one rotator and into juxtaposition with another rotator. Each rotator is provided with means for selectively releasably locking it in any one of four positions. The playing pieces are of tapered form to facilitate tilting thereof for removal from the rotators.

**2 Claims, 11 Drawing Figures**



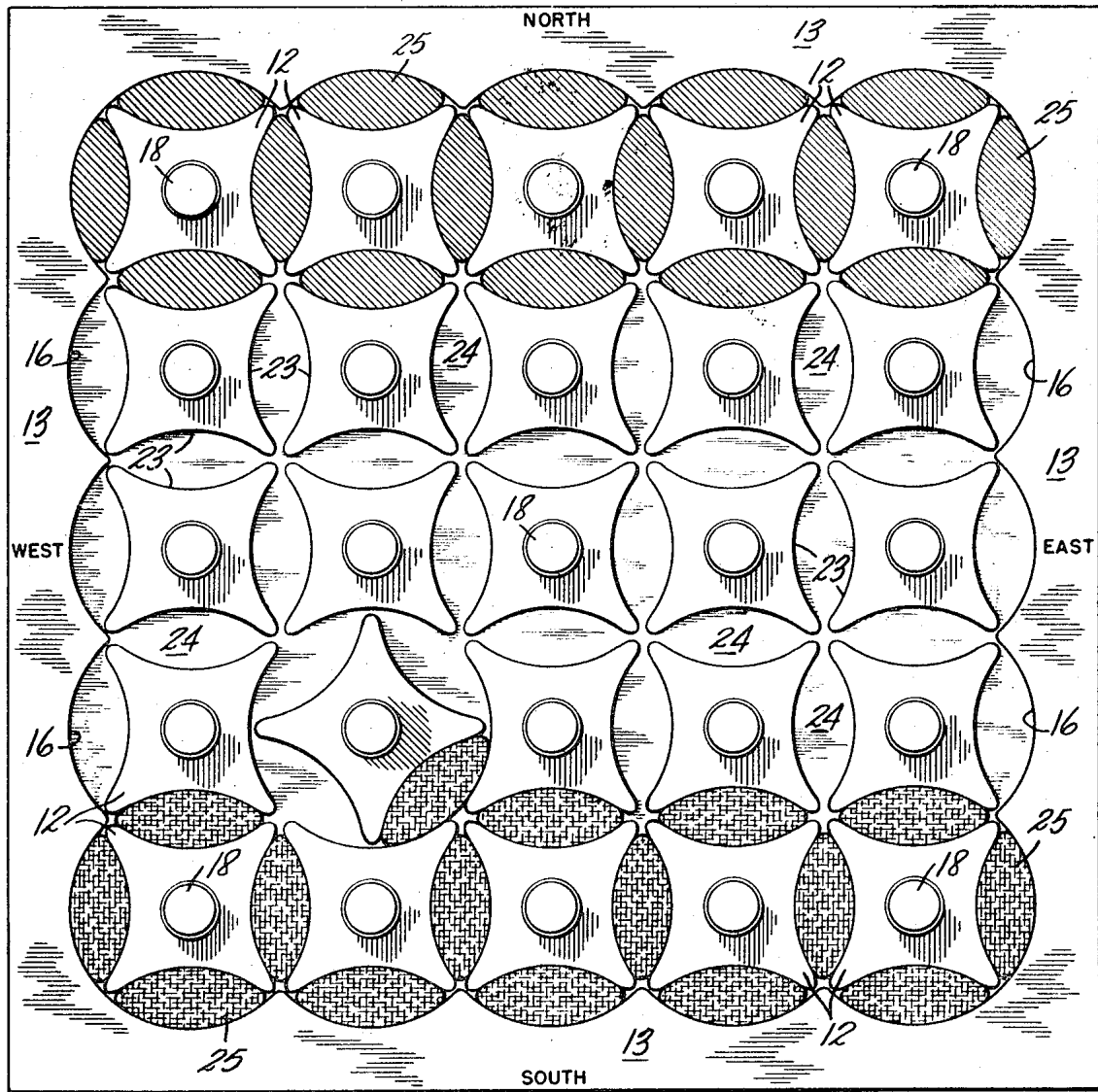


FIG. 1

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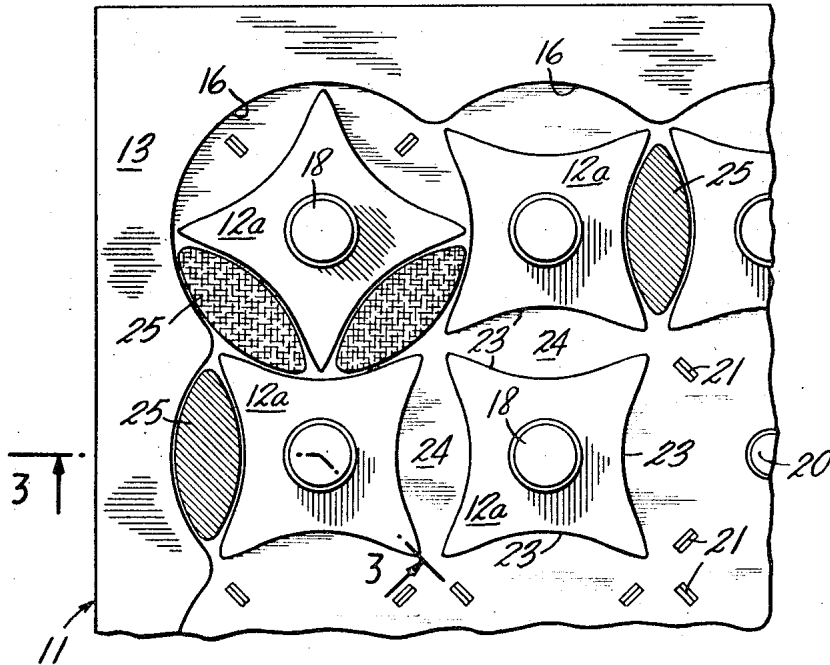


FIG. 2

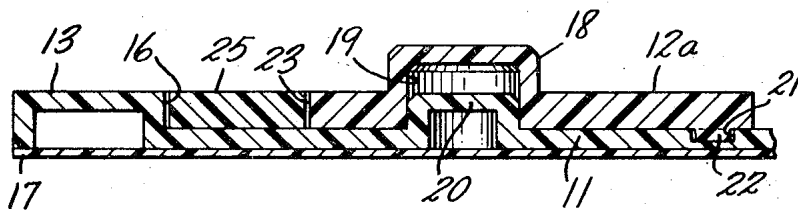


FIG. 3

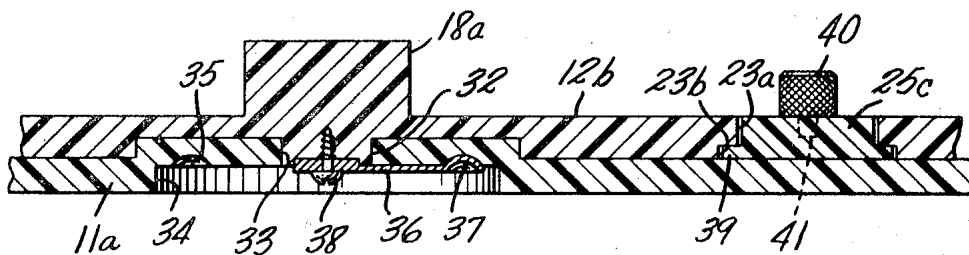


FIG. 4

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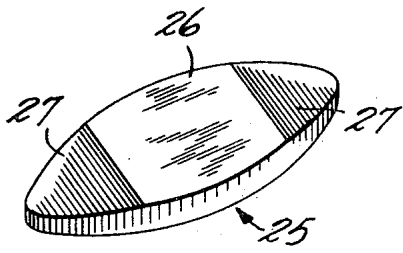


FIG. 5

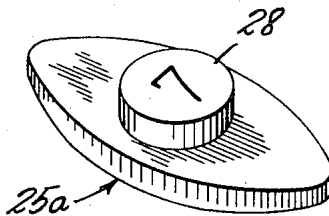


FIG. 6

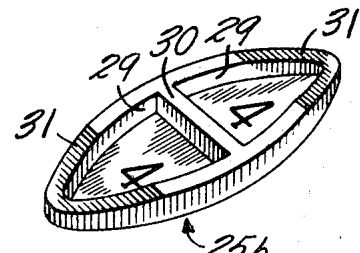


FIG. 7

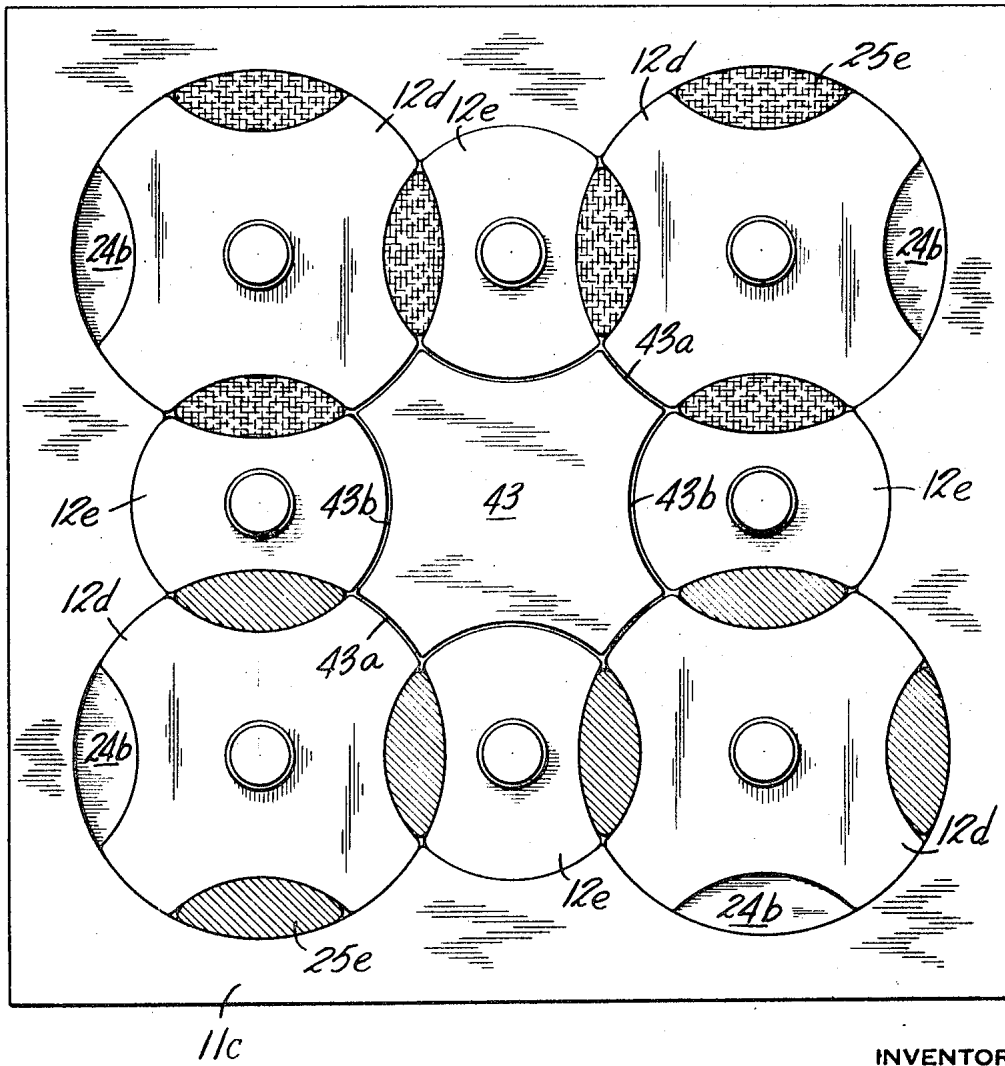
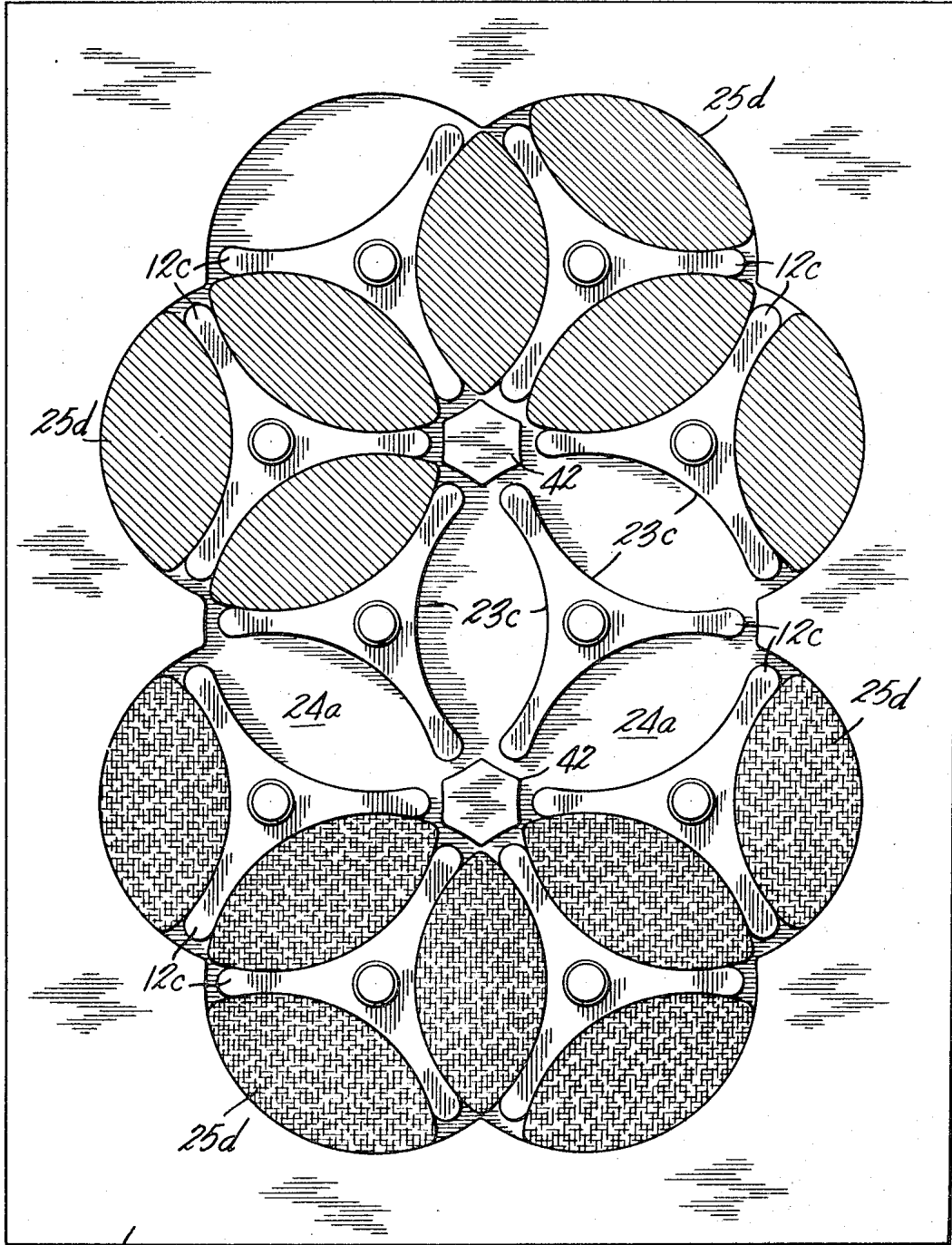


FIG. 9

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FIG. 8

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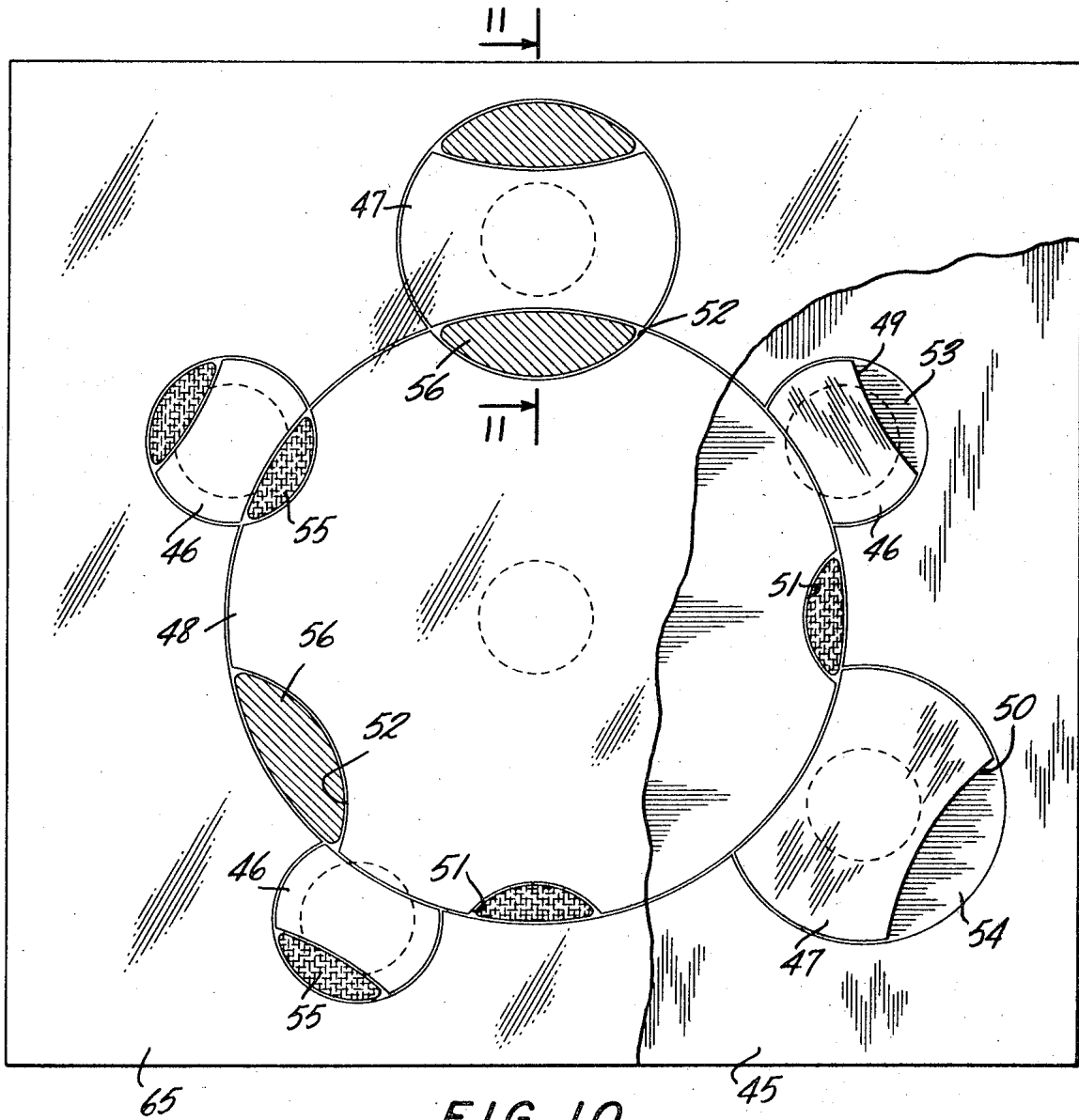


FIG. 10

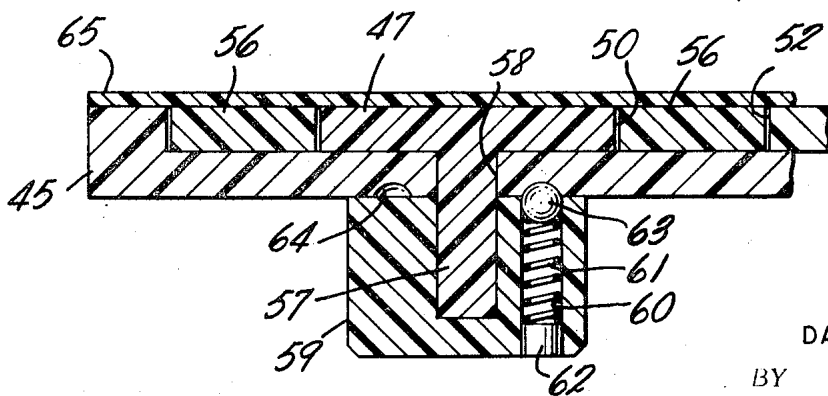


FIG. 11

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## BOARD GAME APPARATUS

## BACKGROUND OF THE INVENTION

This invention relates to game apparatus that one or more players may use for a variety of games.

Most games have a limited appeal and usefulness as a result of requiring a certain particular number of players, for example two or four, to perform restricted movements of cards or pieces. If a fewer or a greater number of players are available than can use such a game, the game's usefulness is impaired. Moreover, if the game is too routine in its play, its appeal rapidly fades, the players lose interest in it, and the game ceases to provide entertainment.

The present invention overcomes the deficiencies of many prior games by providing a game apparatus that permits one or more players to make an extraordinarily wide variety of decisions in a great number of games. In particular, the inventive game apparatus is formed by a base on which is positioned an array of rotators, each of which is positioned selectively at a plurality of angular and aligned positions. Elongated spaces defined by arcuately shaped sections on adjacent rotators are adapted to receive playing pieces having generally the contour of the spaces. Such pieces may take a variety of forms, be of various colors, and carry indicia, depending on the game to be played. With this arrangement and with two adjacent rotators in alignment, angular movement of one of the rotators from one to another selected one of its positions moves a playing piece from juxtaposition with one adjacent rotator to juxtaposition with another adjacent rotator. At the same time, any other playing pieces positioned at the rotator being angularly shifted will also be moved to new positions on the board. It will be apparent that this game apparatus may be used by a single player who can attempt, for example, to align playing pieces in a preselected manner, or by a number of players who endeavor to move their own pieces to preselected positions or in preselected patterns on the board.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view of game apparatus in accordance with the present invention;

FIG. 2 is an enlarged plan view of a portion of the game apparatus of FIG. 1 with several rotators removed and the contours of the rotators being somewhat modified;

FIG. 3 is an enlarged cross-section of FIG. 2 taken along the view line 3—3 looking in the direction of the arrows;

FIG. 4 is a cross-sectional view similar to that of FIG. 3 to show a modified form of base, rotator and game playing piece;

FIG. 5 is a view in perspective from below of one of the game pieces forming a part of the game apparatus of FIG. 1;

FIG. 6 is a view in perspective from above of another form of playing piece with a removable insert that may be used with the game apparatus of FIG. 1;

FIG. 7 is a perspective view of still another playing piece;

FIG. 8 is a plan view of another game apparatus in accordance with the present invention;

FIG. 9 is a plan view of still another game apparatus in accordance with the present invention;

FIG. 10 is a plan view of yet another game apparatus in accordance with the present invention; and

FIG. 11 is a cross-section of FIG. 10 taken along the view line 11—11 looking in the direction of the arrows.

## DESCRIPTION OF THE INVENTION

Referring to a typical embodiment of the invention with particular reference to FIGS. 1, 2 and 3, game apparatus 10 is formed by a base 11 on which is positioned an array of rotators 12 (FIG. 1) or 12a (FIGS. 2 and 3). If desired, North, South, East and West may be placed on the base as shown to identify sides of the game apparatus. The array shown includes five horizontal rows of the rotators 12 and each row includes five rotators. The rows may be designated by numbers, letters or both. It should be understood that the invention contemplates the use of any desired number of rotators in the array

and that the array need not be symmetrical as depicted in FIG. 1. Further descriptions of the invention in connection with FIGS. 8, 9, 10 and 11 illustrate other typical arrangements.

On the base 11 are provided peripheral portions 13 typically formed integrally with the base. Arcuately contoured sections 16 having centers of curvature coincident with the centers of rotation of the adjacent rotators 12 facilitate angular movement of the rotators 12 positioned along the periphery of the array. The base 11 may also include a relatively thin supporting layer 17 (FIG. 3) of some softer material than the base 11, which typically can be molded of plastic material, to prevent marring of surfaces on which the game apparatus is placed.

Referring to details shown in FIGS. 2 and 3, the rotators 12a, for example molded of a suitable plastic material, include an integrally formed knob 18 which accommodates a cylindrical recess 19. An axle 20, formed in the base 11, extends into the recess 19 to hold the rotator 12a in position and to permit its angular movement.

To position the rotators 12a at selected angular positions, in this instance by releasably locking them, depressions 21, typically V-shaped as shown, are provided in the base 11 to cooperate with complementary V-shaped protrusions 22 extending from the rotators 12a. More specifically, in the embodiment of FIGS. 2 and 3, four of the V-shaped depressions 21 are spaced at 90° angles around each of the axles 20 on the base 11 and four protrusions 22 are provided on the rotators 12a. When the knob 18 is grasped and the rotator 12a turned, the protrusions 22 slide out of their respective slots 21 and the rotator 12a may be moved 90° at which time the protrusions 22 will engage another set of the slots 21 and the rotator "click" into another angular position.

If desired, the axle 20 may be omitted and the depressions 21 and protrusions 22 used to position the rotators 12a properly as well as releasably locking them at four angular positions.

The releasably locking means may be omitted, if desired, and friction relied upon to hold the rotators at desired angular positions. For example, friction between the axle 20 and recess 19 could be sufficient.

As can be seen from FIG. 2, four arcuately shaped sections 23 are provided on the rotators 12a. It has been found desirable to deviate from the true arcuate sections 23, shown in FIG. 1, to insure smoother operation of the game apparatus, as will be described in greater detail hereinafter. Thus, note that the ends of the arcuate sections 23 in FIG. 2 are somewhat flattened to provide a more pointed configuration for the rotators 12a, as contrasted with the rotators 12 of FIG. 1. This provides for smoother operation of the apparatus.

The arcuately shaped sections 23 on the rotators provide elongated spaces 24 between adjacent rotators 12, and between the rotators 12 and the arcuate sections 16, both when the rotators are releasably locked and aligned with another adjacent rotator, or when the rotators are not aligned in one of their four angular positions. Playing pieces 25 having contours similar to the contours of the elongated spaces 24 are fitted into at least some of the spaces 24 and rest on the base 11, as shown in FIGS. 1 and 2. In certain instances, playing pieces are positioned in all of the elongated spaces.

Referring to FIG. 5, the playing piece 25 includes arcuately shaped sides and a supporting surface having a central flat face 26 and a pair of surfaces 27 tapering from the central face. The ends of the piece are rounded for smoother operation. With the playing piece 25 resting on the base 11 in one of the elongated spaces 24, it is a simple matter to press down on one end of the piece, thereby pivoting it upwardly so that the piece may readily be grasped and removed from the space.

The playing pieces may take other desired forms. For example, in FIG. 6 a playing piece 25a having the same general configuration as the piece 25 includes a removable insert or secondary piece 28 on its upper surface which may be removed to indicate a different value for the piece. The insert 28 may also be secured to the piece, thus becoming a knob which facilitates the piece's removal from and insertion into

the spaces 24. Note that the secondary piece 28 carries a number to identify the piece or its value and such numbers or other indicia may be used with any playing piece included in the game apparatus. Note also that gold and green pieces are shown in FIGS. 1 and 2, and that other suitable and attractive colors may be used for the playing pieces to form, by manipulation of the rotators 12, desired patterns, for example geometric designs, simulated flowers and other attractive arrangements appealing to the esthetic senses.

Still a further form of playing piece 25b shown in FIG. 7 includes hollowed-out sections 29 which may carry indicia such as numbers or may also be used to hold other smaller pieces used in the playing of the game at hand. Adhesive tape may also be employed as indicia. A bar 30 across the piece 25b enables it to be removed readily from the elongated spaces. If the piece 25b is turned over to secrete the indicia or other items located in the recesses 29, it may readily be removed from the elongated spaces 24 by reason of its tapered end surfaces 31 which permit pivoting of the piece 25b by pushing downwardly on either end.

In a typical operation of the game apparatus illustrated in FIG. 1, a player with gold playing pieces 25, shown in position on the South side of the game apparatus 10, has the objective of placing pieces in the elongated spaces along the North side of the game apparatus. The second player has the opposite objective, placing his green pieces 25 in the South side of the game apparatus. By throwing a die or in other desired manner, the players decide who has the first turn. On the assumption that gold plays first, the rotator 12, shown partially turned in the second row from the bottom in FIG. 1, is grasped and operated to move one of the pieces 25 into juxtaposition with an adjacent one of the rotators 12 in the second row. The adjacent rotators remain fixed in position as a result of the releasable locking action of the protrusions 22 and depressions 21. Note also that in the embodiment of FIG. 2, the flattened end portions of the arcuately shaped sections 23 on the rotators 12a, the rounded ends of the playing pieces, and the rounded points of intersection of sections 16, insure movement of the pieces 25 without any interference and binding effects by adjacent rotators. Note that movement and transfer of playing pieces out of juxtaposition with one of the adjacent rotators and into juxtaposition with another of the adjacent rotators can only occur when two adjacent rotators are in alignment; i.e., their respective arcuate sections are aligned as shown, for example, by all of the rotators, in FIG. 1, except one.

The players then alternately move until the game is completed. One interesting feature of the game is the movement of an opponent's piece, as well as the player's own piece, when gold and green pieces are juxtaposed with one rotator.

In an alternative form of the foregoing game, a die may be thrown to determine the number of moves or "clicks" that a player may take. A click is defined as a 90° rotation of the rotator 12 and is chosen due to the slight noise made as a rotator is moved from one releasably locked position to another. If fiction is relied on to hold the rotators in selected aligned positions, no click would be heard and the move can be defined in any other desired fashion.

In another game that may be enjoyed through use of the inventive game apparatus, the object is to build a continuous chain of playing pieces from one side of the board to the opposite side. The player who first succeeds in completing the chain wins the game. The starting position may be as shown in FIG. 1 and the players then move in turn. As will be evident, in this game a player not only may advance his own position by adding pieces to his chain, but he may also disrupt his opponent's position by moving both his own pieces and his opponent's pieces through angular movement by turning the rotator containing both types of pieces.

It is apparent that the variety of games that may be played with the inventive game apparatus is limited only by the imagination of the players. For example, various playing pieces carrying numbered indicia may be used with the ap-

paratus to provide for accumulation of scores as pieces reach a desired objective.

Pieces may also be turned over after having reached the opposite side, for example, playing piece 25b shown in FIG. 7. Such a piece may then have a greater value and be used to effect a desired purpose in a game. Note that the secondary pieces 28 of FIG. 6 may also be used to indicate value.

Additional features that may be incorporated into the inventive game apparatus are shown in FIG. 4. A rotator 12b includes a knob 18a and a downwardly extending shaft 32 fitting a cylindrical opening 33 in a modified form of base 11a. A cylindrical recess 34 in the lower side of the base 11a includes four depressions 35 spaced at 90° about the opening 33. A leaf spring 36 having at its free end a cam-like protrusion 37, which fits the depressions 35, is secured by a screw 38 to the center of the rotator 12b. This provides releasably locking means for selectedly positioning the rotator 12b at one of four angular locations. The rotator 12b may otherwise have the contours shown for the rotator 12a in FIG. 2.

An arcuately shaped section 23a of the rotator 12b includes an under-cut portion 23b which receives a flange 39 extending from the contoured sides of a playing piece 25c, thereby holding the piece in position even if the game apparatus is inverted. A removable indicator 40 fits an opening 41 in the playing piece 25c. The arcuate sections of the peripheral portions (not shown) also are provided with under-cut portions to receive the flanges 39 of the pieces 25c.

The game apparatus of FIG. 4 is particularly well suited for portability and may be used while traveling. For example, numbered pieces such as shown in FIG. 6, but being provided with the flange 39, may be incorporated in the game apparatus of FIG. 4. The objective would then be to arrange pieces in rows with the numbers in various sequences, as a form of solitaire. Such a game apparatus could be made relatively small to fit a purse or pocket. The flange 39 prevents the pieces 25c from falling out of the base and the leaf spring 36 retains the rotators. Note that rounding of the ends of the playing pieces is limited (not shown) in this embodiment in order to provide the greatest possible flange length.

In a still further form of the invention shown in FIG. 8, a base 11b carries an array of rotators 12c positioned on the base as explained in connection with the embodiments of FIGS. 1 and 2. Arcuately shaped sections 23c form elongated spaces 24a which receive playing pieces 25d. Releasably locking means, similar to that shown in FIGS. 1 and 2, may be used, with the exception that rotators 12c are releasably locked in three angular positions spaced 120° apart. In addition, hexagonally shaped sections 42 may be provided on the base 11b to facilitate movement of the playing pieces 25d from their juxtaposition with one adjacent rotator to juxtaposition with another adjacent rotator. It will be apparent that the operation of the apparatus of FIG. 8 is similar to that described in connection with FIG. 1, and that similar games may be played with this game apparatus. However, with the reduced number of rotators, and fewer pieces and elongated spaces available, the games will be somewhat less complex.

Still a further form of the inventive game apparatus is shown in FIG. 9. A base 11c supports an array of different size rotators 12d and 12e. The larger rotators 12d are separated by the smaller rotators 12e to provide an interesting arrangement of elongated spaces 24b. Note that playing pieces 25e are not symmetrical, as in the other embodiments of the invention herein shown, due to the different diameters of the rotators. The rotators 12d and 12e are supported on the base and releasably locked in position in a manner similar to that described in connection with FIGS. 1 and 2. The rotators 12e are, however, releasably locked in only two angular positions 180° apart, while the rotators 12d are releasably locked in four angular positions. A center island 43, having arcuately shaped sections 43a and 43b, is located on the base 11c to cooperate with the rotators 12d and 12e and facilitate the movement of playing pieces 25e from one position to another.



It will be apparent that games similar to those described in connection with FIG. 1 can be played with the game apparatus of FIG. 9. Again, the games will be somewhat less complex and perhaps better suited to children and those wishing to engage in solitaire.

Another form of the inventive game apparatus, shown in FIGS. 10 and 11, includes a base 45 supporting an array of various sized rotators 46, 47 and 48. The smaller diameter rotators 46 and 47 are arrayed about the large central rotator 48. Arcuately shaped sections 49 and 50 formed in the smaller rotators 46 and 47 can be selectively aligned with arcuately shaped sections 51 and 52, respectively, formed in the large rotator 48, to provide elongated spaces 53 and 54 of different sizes. Unsymmetrical playing pieces 55 and 56 respectively fit the elongated spaces 53 and 54 and are positioned in some or all of such spaces, as desired.

As shown in FIG. 11, the rotators 46, 47 and 48 are provided with integrally formed axles 57 which extend downwardly through an opening 58 in the base 45 into a knob 59. The axle and knob are secured together to enable rotation of the rotator 47 by operation of the knob from beneath the base 45. To releasably lock the rotator 47 at two selected positions providing alignment of the arcuately shaped sections 50 and 52, a bore 60 in the knob carries a spring 61, restrained at one end by a plug 62, which urges a ball 63 into one of two recesses 64. A greater number of recesses are provided to releasably lock the large rotator 48 in alignment with the peripheral rotators 46 and 47. If desired, however, the large rotator 48 may be held in its selected positions by frictional forces.

To hold the playing pieces in position, a transparent plastic sheet 65 covers the base 45. This arrangement permits the game apparatus to be carried in pocket or purse and then played when desired. It is apparent that this type of structure may also be used with the arrays of rotators shown in FIGS. 1, 8 and 9, and with other desired arrays.

In playing games with the apparatus of FIGS. 10 and 11, a main feature involves the fact that the peripheral rotators 46 and 47 can be rotated only when their arcuate sections are aligned with matching arcuate sections on the large rotator 48, thus enhancing the educational value to young children of the games played.

It will be apparent that the inventive game apparatus can take many other forms not shown and described herein. For example, several different diameters of rotators may be used in a single game apparatus. Moreover, the playing pieces may take a variety of forms, as desired, for both appearance and adaptability to particular selected games. Therefore, the invention is not to be limited to the specific apparatus disclosed herein but is to be defined by the appended claims.

I claim:

1. Game apparatus comprising a base having a flat surface defined by a raised peripheral portion having inwardly facing arcuately shaped sections, an array of rotators on the base consisting of a plurality of rotators arranged in a number of rows, a knob extending from the upper surface of each rotator, axle means cooperating with each of the rotators and the base to facilitate rotation of the rotator by the knob in a fixed position on the base, means to releasably lock each of the rotators in a selected one of four angular positions at which the rotator is aligned with adjacent rotators that are releasably locked in position, said releasably locking means including depressions formed in one of the base and the rotator and cooperating protrusions formed in the other of the base and the rotator, four arcuately shaped and outwardly facing sections spaced equally about the periphery of each of the rotators, the arcuately shaped sections on the rotators providing elongated spaces having generally arcuate sides between ad-

5 adjacent rotators and between the raised peripheral portion and the rotator sections adjacent thereto, one of said spaces being formed by two arcuately shaped sections on a pair of adjacent rotators when said pair of adjacent rotators are aligned, one of said spaces being formed by two arcuately shaped sections on the raised peripheral section and one of the adjacent rotators when said rotator is in one of its four releasably locked positions, the side of the elongated space defined by the arcuately shaped section of one of the rotators having a center of curvature coincident with the center of rotation of the adjacent rotator, and playing pieces having contours similar to the contours of the elongated spaces and fitting the spaces, each of the playing pieces including a central flat portion adapted to rest on the base and surfaces extending upwardly from the flat portion towards the ends of the playing piece to facilitate removal of the playing pieces from the elongated spaces, the playing pieces being positioned in at least some of the spaces, the rotators, axle means, playing pieces and elongated spaces substantially covering the flat surface on the base so that rotation of one rotator of the pair of aligned and adjacent rotators from one to another of its releasably locked positions can move one of the playing pieces located at said one rotator out of juxtaposition with the other rotator in the pair and into juxtaposition with another of the adjacent rotators.

2. Game apparatus comprising a base having a flat surface defined by a raised peripheral portion having inwardly facing arcuately shaped sections, a square array of rotators on the base consisting of 25 rotators arranged in five rows of five rotators, a knob extending from the upper surface of each rotator, axle means cooperating with each of the rotators and the base to facilitate rotation of the rotator by the knob in a fixed position on the base, means to releasably lock each of the rotators in a selected one of four angular positions at which the rotator is aligned with adjacent rotators that are releasably locked in position; said releasably locking means including depressions formed in one of the base and the rotator, at least one protrusion carried by the other of the base and the rotator, and spring means acting to retain the rotator on the base and urge the protrusion into the depressions upon rotation of the rotator; four arcuately shaped and outwardly facing sections spaced equally about the periphery of each of the rotators, the arcuately shaped sections on the rotators providing elongated spaces between adjacent rotators and between the raised peripheral portion and the rotators adjacent thereto, one of said spaces being formed by two arcuately shaped sections on a pair of adjacent rotators when said pair of adjacent rotators are aligned, one of said spaces being formed by two arcuately shaped sections on the raised peripheral section and one of the adjacent rotators when said rotator is in one of its four releasably locked positions, the side of the elongated space defined by the arcuately shaped section of one of the rotators having a center of curvature coincident with the center of rotation of the adjacent rotator, and playing pieces having contours similar to the contours of the elongated spaces and fitting the spaces, each of the playing pieces including a central flat portion adapted to rest on the base and surfaces extending upwardly from the flat portion towards the ends of the playing piece to facilitate removal of the playing pieces from the elongated spaces, the playing pieces being positioned in at least some of the spaces, the rotators, axle means, playing pieces and elongated spaces substantially covering the flat surface on the base within the raised peripheral portion so that rotation of one rotator of the pair of aligned and adjacent rotators from one to another of its releasably locked positions can move one of the playing pieces located at said one rotator out of juxtaposition with the other rotator in the pair and into juxtaposition with another of the adjacent rotators.

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