Sept. 20, 1971 L. E. GREEN 3,606,333

THREE-DIMENSIONAL BOARD GAME APPARATUS

Filed Nov. 14, 1969 2 Sheets-Sheet 1

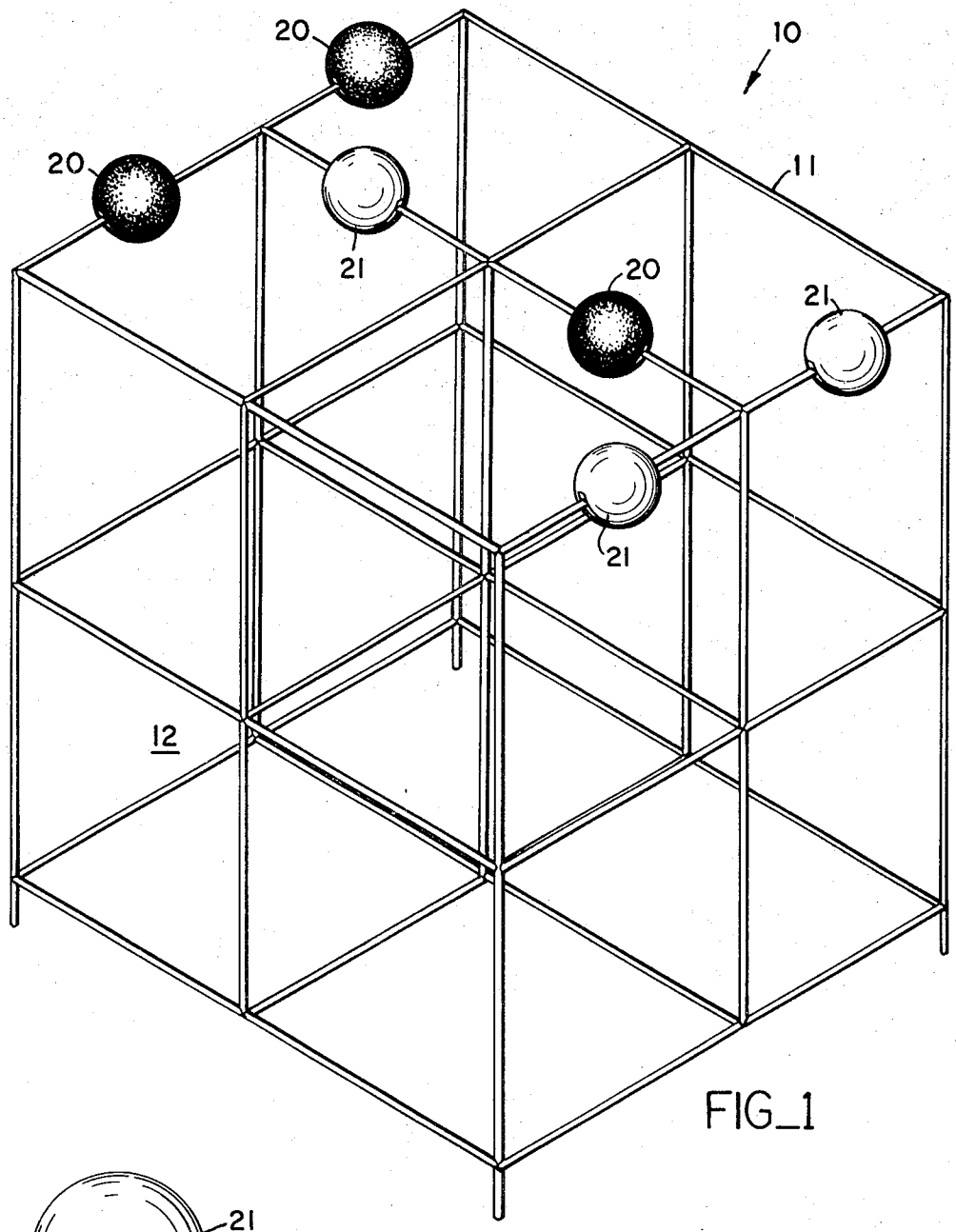


FIG_1

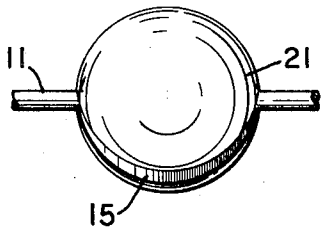


FIG_2

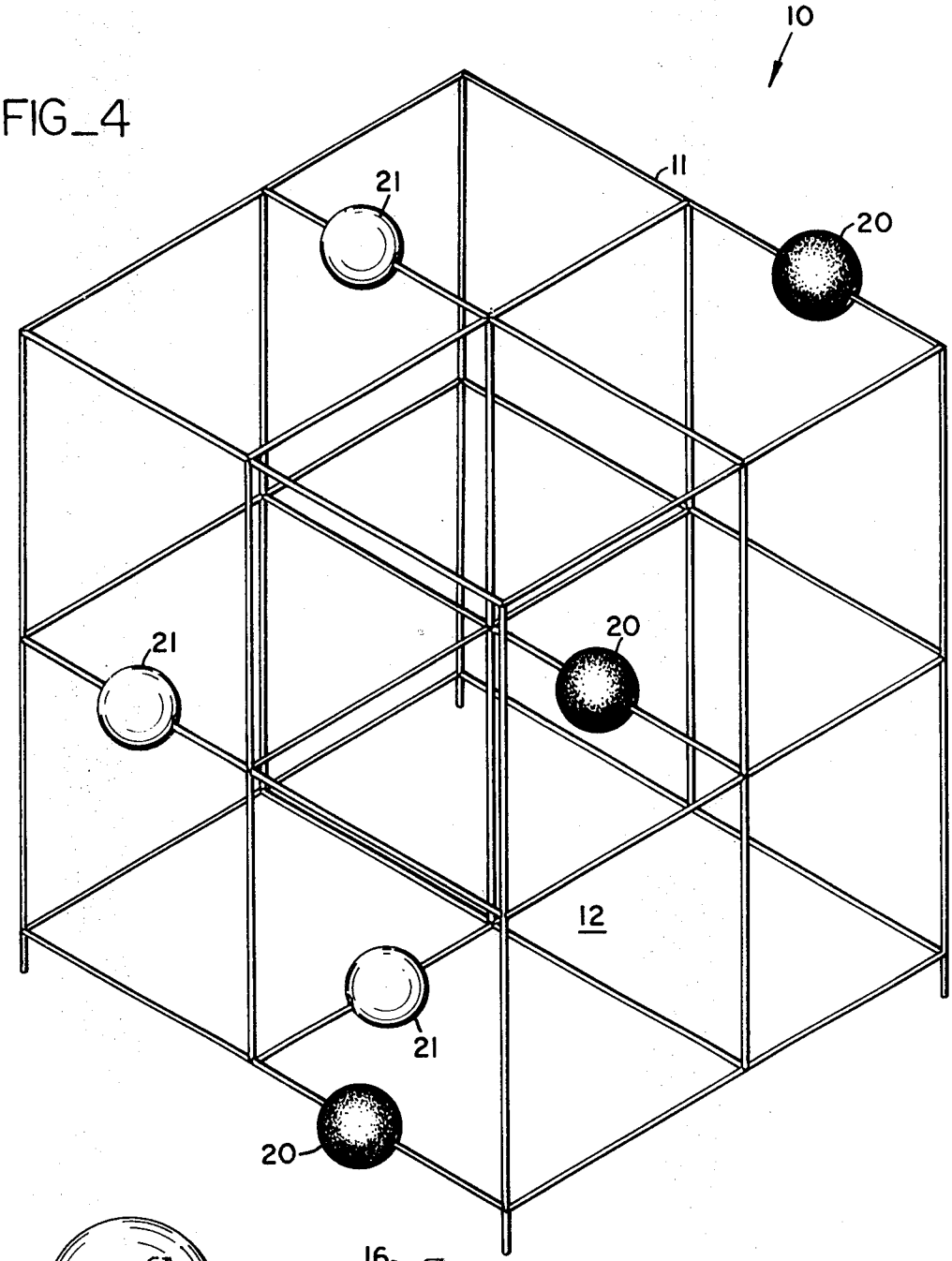
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FIG_4



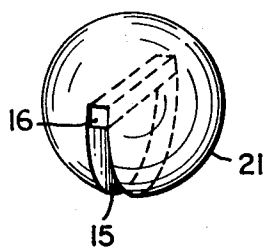


FIG_3



FIG_3A

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THREE-DIMENSIONAL BOARD GAME APPARATUS

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Int. Cl. A63f 3/02
U.S. Cl. 273—131A 4 Claims

ABSTRACT OF THE DISCLOSURE

A three-dimensional game comprising a hexahedral framework of rods arranged to form a compact array of eight hexahedral elements substantially equal in size, and a plurality of game pieces each formed with a partially bisecting slot arranged to intersect and removably engage rods of the framework. In one example the framework rods are formed of magnetically permeable material, and an elongate magnet is seated along the base of the bisecting slot of each game piece for magnetically engaging the rods of the framework.

This invention relates to a new and improved game played on a three-dimensional framework. It is an object of the present invention to provide a new and improved three-dimensional game which, on the one hand, incorporates the simplicity of games of the type exemplified by tic-tac-toe, but which, on the other hand, permits introduction of more complex game elements such as that found in chess or checkers.

In order to accomplish these results, the present invention contemplates a game played on a three-dimensional framework in which a generally fixed number of game pieces are moved between positions according to specified rules to achieve a desired configuration. In this respect, the game includes elements from games such as checkers or chess. The invention also contemplates, however, a game in which each opponent attempts to achieve an arrangement of three game pieces in a row in order to win. In this respect, it is similar to tic-tac-toe. It differs, however, in that the orientation must be achieved by maneuvering a generally fixed number of pieces between positions according to fixed rules, rather than by the expedient of adding new pieces to the game board or framework from an effectively unlimited number of pieces.

According to one aspect of the invention, the three-dimensional game board upon which the game is played comprises a generally cubical framework formed by rods lying along the intersections of the sides of eight cubical elements substantially equal in size and arranged side by side to form the framework. A plurality of game pieces adapted to engage the rods of the cubical framework are provided for maneuvering around positions on the framework according to game rules to achieve a desired configuration.

According to another aspect of the invention, the game pieces are three in number for each opponent and are initially placed in a starting configuration from which they must be maneuvered to other positions according to fixed rules and in alternating sequence until a winning configuration is achieved. Two or more persons can play the game.

In one form of the invention, the game pieces comprise slotted balls, three of a particular identifiable type for each player. In one embodiment, the slots are formed to frictionally engage the rods of the cubical game framework. In another embodiment the framework is formed by rods of magnetically permeable material and an elongate permanent magnet is seated in the base of each of the slots of the slotted ball game pieces, retaining the game piece balls on the respective rods upon which they are placed.

Other objects, features and advantages of the present invention will become apparent in the following specification and accompanying drawings.

In the drawings:

FIG. 1 is a perspective view of a three-dimensional game according to the present invention showing a cubical frame-work and game pieces arranged in one initial configuration for playing a game.

FIG. 2 is a detailed perspective view of a slotted ball game piece engaging a rod of the cubical framework.

FIG. 3 is a side perspective view of a slotted ball game piece showing an elongate permanent magnet piece in the base slot for engaging the rods of the cubical framework, while FIG. 3A is a perspective view of the elongate permanent magnet.

FIG. 4 is a perspective view of the cubical game framework showing one set of game pieces in a winning configuration.

In the example of the present invention illustrated in FIG. 1, there is provided a generally cubical three-dimensional framework **10** which provides a three-dimensional "game board." The framework **10** is formed by rod segments **11** lying along the intersections of the sides of eight cubical elements **12** substantially equal in size and arranged side by side in a compact array to form the generally cubical framework **10**. A plurality of game pieces **20** and **21** of two different types are shown in the example of FIG. 1, adapted to engage the rods **11** of the cubical framework. Each of the game pieces is adapted for maneuvering to different positions on the framework by removing the game piece from the rod to which it is engaged and placing and engaging the game piece on a different rod section.

As shown in FIG. 2, each of the game pieces **20** and **21** comprises a ball in which is formed a slot **15** extending slightly more than half way through the diameter of the ball. A slot **15** can be formed of a size to frictionally engage the rod section **11** to thereby retain the game piece balls on the respective rods on which they are placed. To this end, slot **15** can be lined or coated with a suitable material such as plastic.

Alternatively, as shown in more detail in FIGS. 3 and 3A, an elongate permanent magnet **16** can be seated in the base of slot **15**. The elongate permanent magnet **16** can be rectangular or circular in cross section and permanently retained at the base of the slot **15** by glue or other suitable means. For game pieces of this type, the framework **10** is formed of rods **11** of a magnetically permeable material so that the game piece balls **20** and **21** magnetically engage each of the rod sections when the slot is appropriately positioned over the rod.

In one form of game contemplated by the present invention, to be played on the three-dimensional framework of the type shown in FIGS. 1 and 4, each player is provided with three game pieces of an identifiable type such as, for example, game pieces **20** and **21**. The game pieces are placed in an initial configuration such as that shown in FIG. 1. Each player, in turn, is permitted one move a game piece in order ultimately to maneuver the game pieces into a desired or winning configuration. According to one example, movement of the pieces is limited to movement from one rod to an adjacent perpendicular rod only. Under these constraints, and similar rules with respect to the movement of pieces, maneuvering strategy can become considerably complicated.

In FIG. 4 is shown one example of a winning configuration. According to this form of the game, a winning configuration is achieved when the three game pieces are maneuvered and arranged in a line or linear array of three pieces along three parallel rod sections. Other configurations can also be designated as the winning configurations.

In the example shown in FIGS. 1 and 4, two or more persons can play. Thus, as shown in FIG. 1, sets of three game pieces for four different players can be arranged on the top layer of rods **11** of the framework **10**. The particular rules for playing different forms of the game can be varied, such as, for example, that only one game piece can be positioned on a rod section at a time or that only two game pieces can be positioned on one rod section at a time.

In addition to the more complex game forms described above, the framework **10** and game pieces **20** and **21** can be used to play three-dimensional tic-tac-toe in the conventional manner with additional game pieces **20** and **21** provided for adding to the rods during alternate turns of the players.

It is apparent that the framework and game pieces contemplated by the present invention are applicable to a variety of game forms. Furthermore, the novel game form in which a fixed number of game pieces are maneuvered under constraints on the framework to achieve a desired winning configuration can be organized according to a variety of specific rules of greater or lesser complexity.

It is also apparent that the game pieces can be formed in a variety of configurations other than spherical, such as square, and other regular and irregular geometrical or fanciful configurations. Furthermore, the three-dimensional framework of rod-like sections can be formed in a variety of configurations other than cubical, such as elongate hexahedral and other solid geometrical and polyhedral arrangements.

What is claimed is:

1. A three-dimensional game apparatus comprising:

a hexahedral framework of rods of magnetically permeable material constructed and arranged to form a compact array of eight hexahedral elements substantially equal in size;

and a plurality of game pieces each formed with a partially bisecting slot and an elongate magnet seated along the base of the slot whereby said game piece intersects and removably engages rods of the framework.

2. A three-dimensional game apparatus comprising:

a generally cubical framework of rods of magnetically permeable material constructed and arranged to form a compact array of eight cubical elements substantially equal in size, each element formed by rods lying along the intersections of the sides of the cubical elements;

and a plurality of game pieces each formed with a partially bisecting slot arranged to slide over the rods of the cubical framework and an elongate magnet seated at the base of the slot for removably engaging said rods.

3. A hexahedral framework of rods constructed and arranged to form a compact array of eight hexahedral elements substantially equal in size; and a plurality of game pieces each formed with a partially bisecting slot formed to intersect and removably frictionally engage rods of the framework.

4. An apparatus as set forth in claim **3** wherein said game pieces comprise spherical elements each having said partially bisecting slot disposed along a diameter of the spherical element.

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DELBERT B. LOWE, Primary Examiner

U.S. Cl. X.R.

273—130A, 130 B, 131B 131D, 136E; 46—23