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(54) **MIND-CONTROL TOYS AND METHODS OF INTERACTION THEREWITH**

(75) Inventors: **Stephen C. Hallaian**, Long Beach, CA (US); **Stephen P. K. Lau**, Torrance, CA (US); **Kam Young-enn Kim Redlawsk**, Los Angeles, CA (US); **Joseph W. Franke**, Studio City, CA (US)

(73) Assignee: **Mattel, Inc.**, El Segundo, CA (US)

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(51) **Int. Cl.**
A63H 29/08 (2006.01)

(52) **U.S. Cl.** **446/173**

(58) **Field of Classification Search** 446/173; 436/36; 273/460

See application file for complete search history.

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Primary Examiner — Ronald Laneau

(74) *Attorney, Agent, or Firm* — Kolisch Hartwell, PC

(57) **ABSTRACT**

A mind-control toy is provided, comprising one or more biosensors configured to detect brainwave activity and generate signals based on the detected brainwave activity. A controller may be responsive to the signals to direct a member to effect movement of one or more objects. In some embodiments, the member includes a device for suspending the object in midair above the device, and the controller is responsive to the first signal to vary output of the device to control a suspended height of the object. In some such embodiments, the mind-control toy includes an obstacle course defining an aerial path. In other such embodiments, the mind-control toy includes a track along which players can compete or cooperate. In other embodiments, the mind-control toy includes a maze, a portion of which may be rotated using mind control to maneuver the object from a start zone to an end zone.

22 Claims, 9 Drawing Sheets

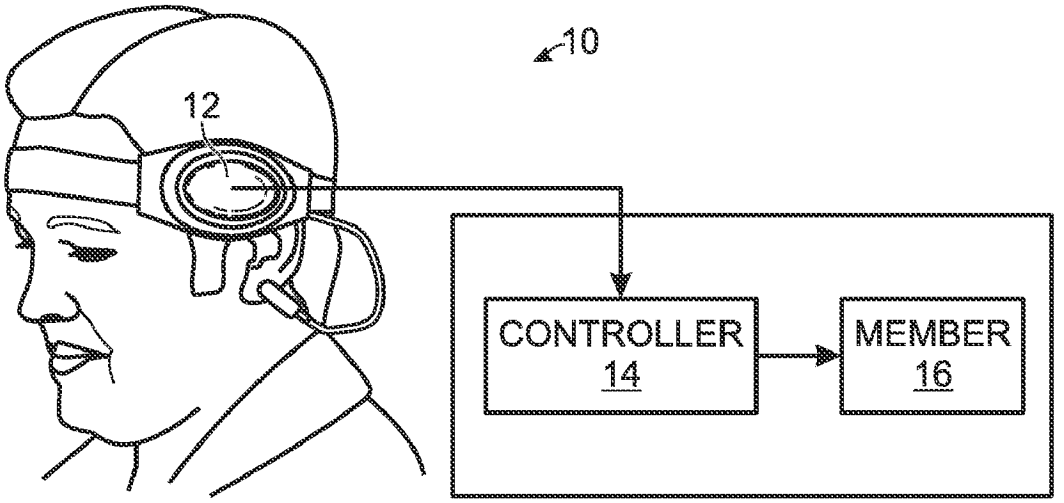

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Fig. 1

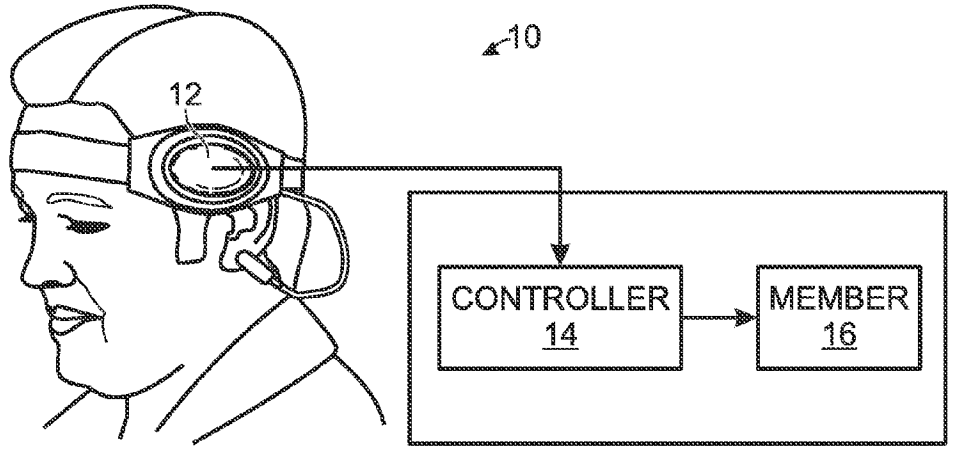
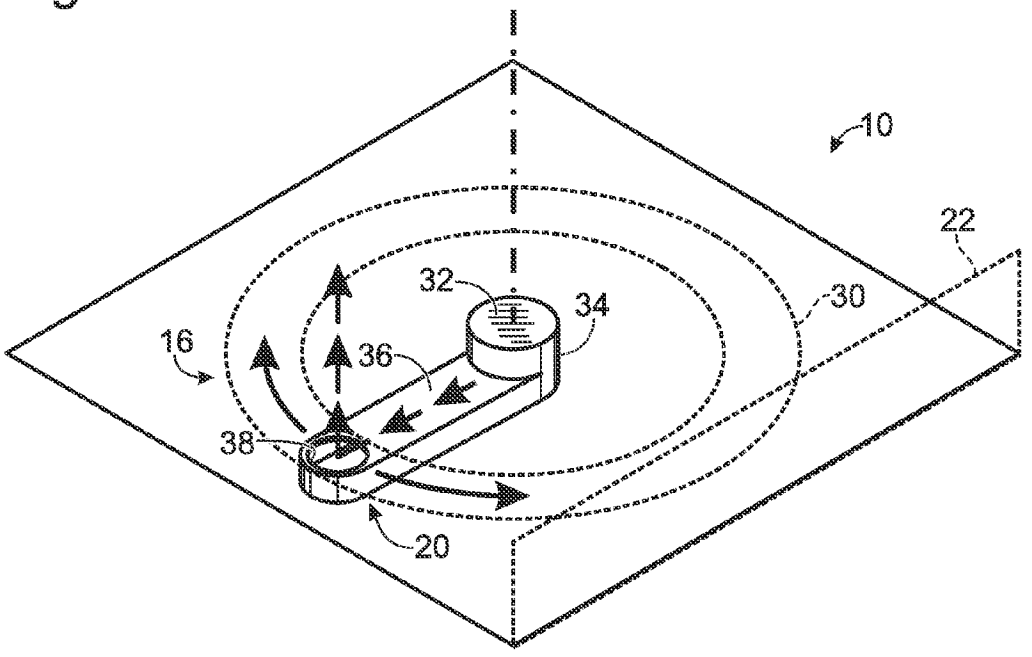


Fig. 3



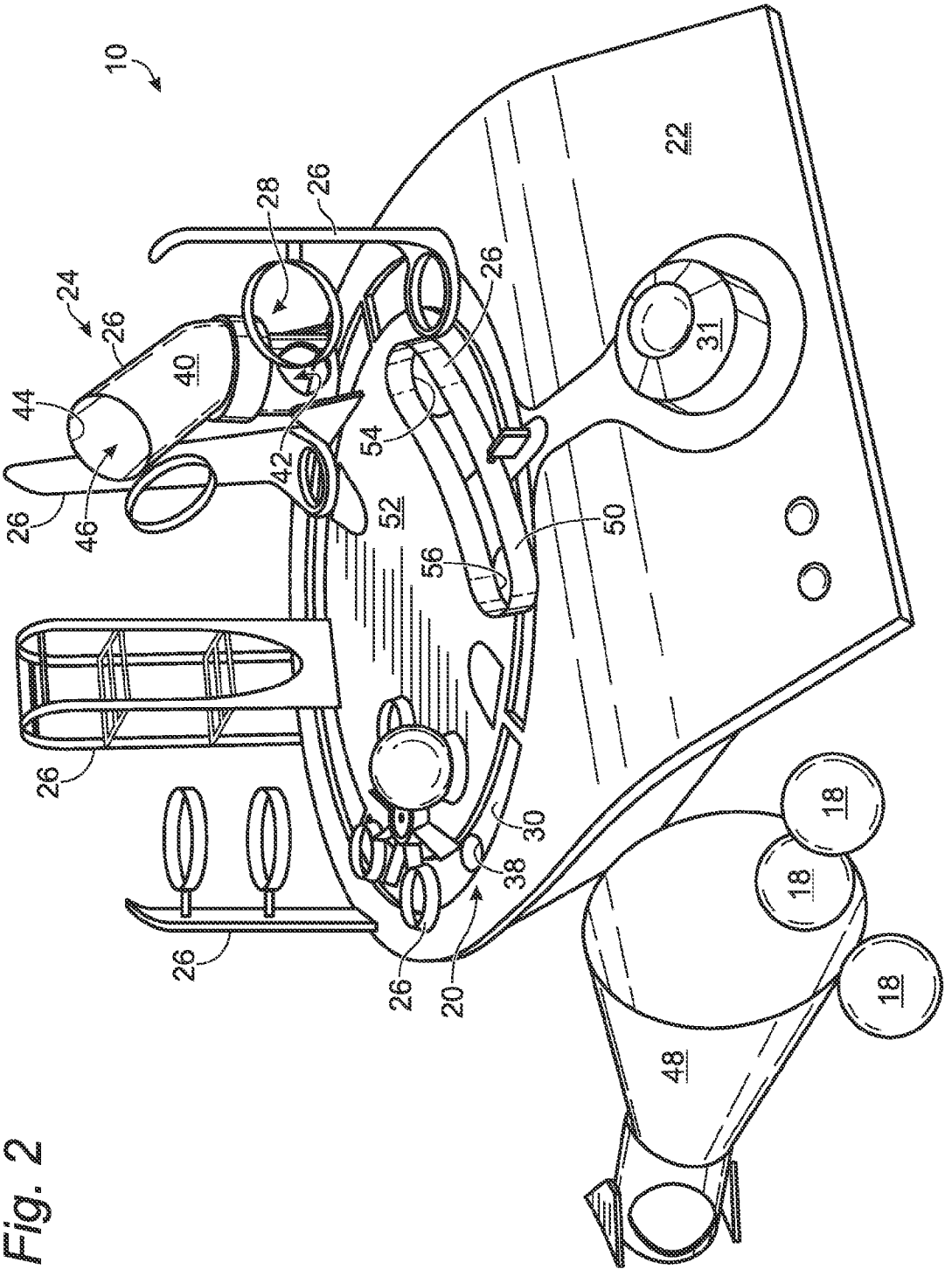

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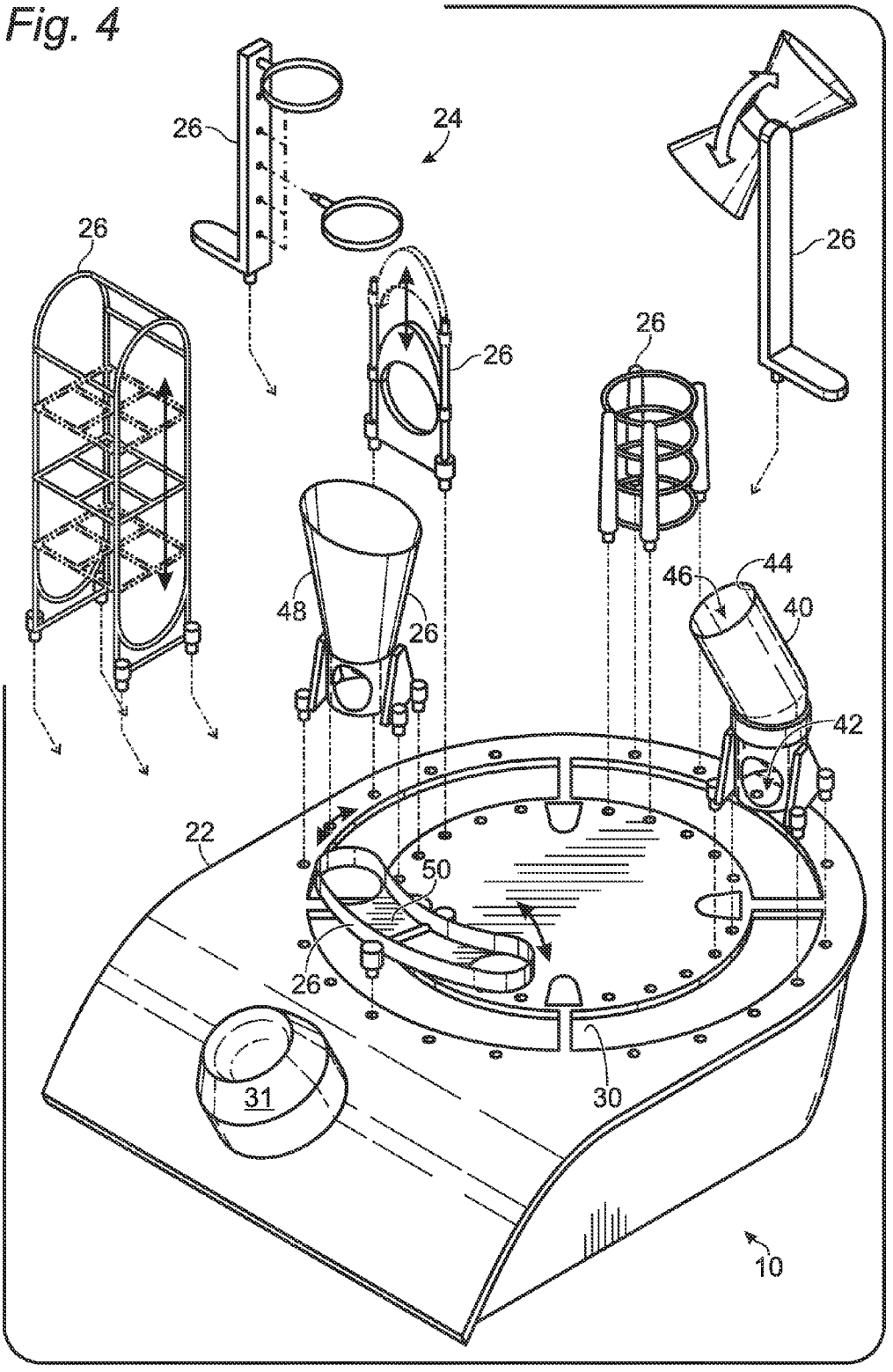
Fig. 2

Fig. 4



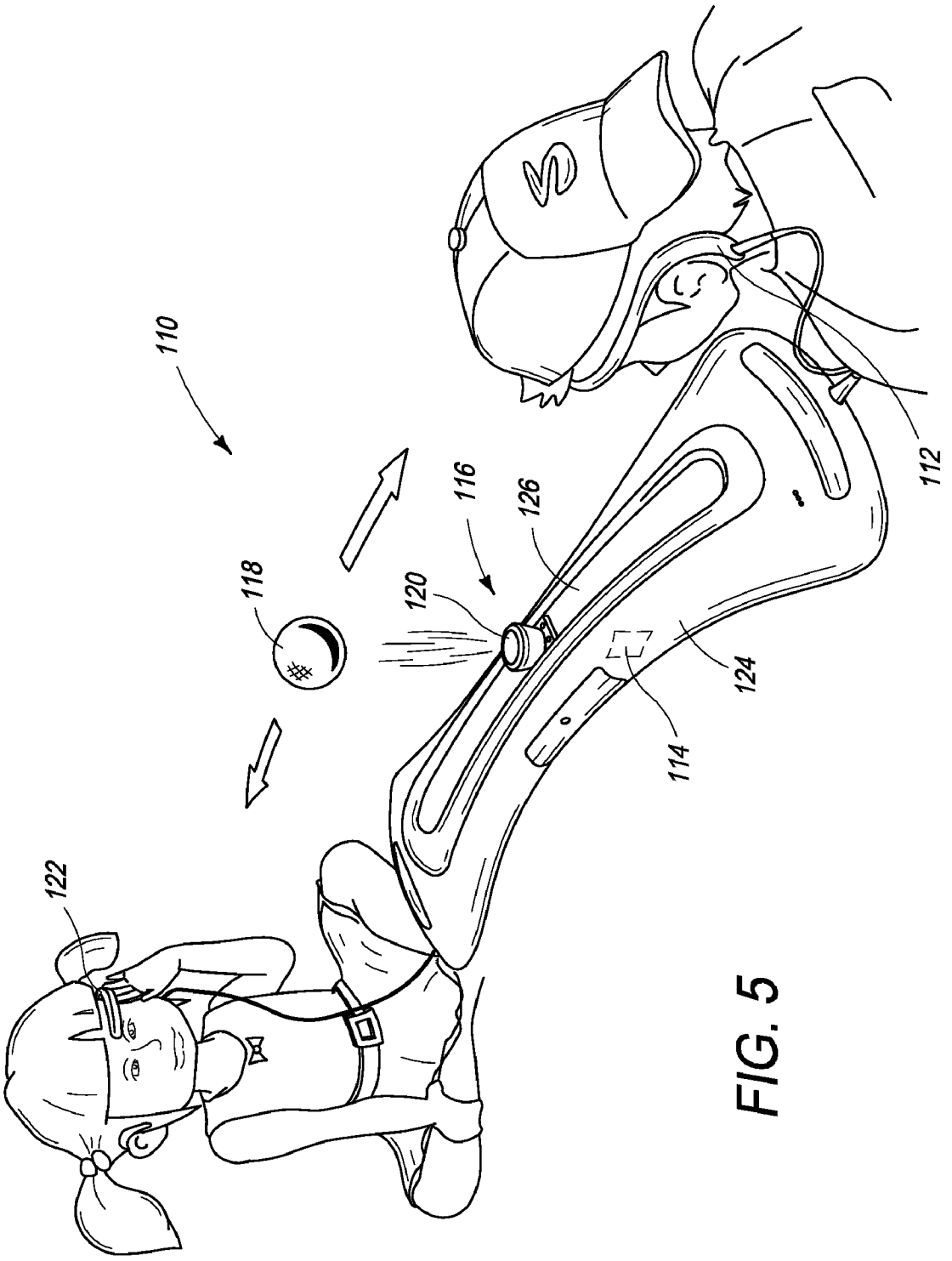


FIG. 5

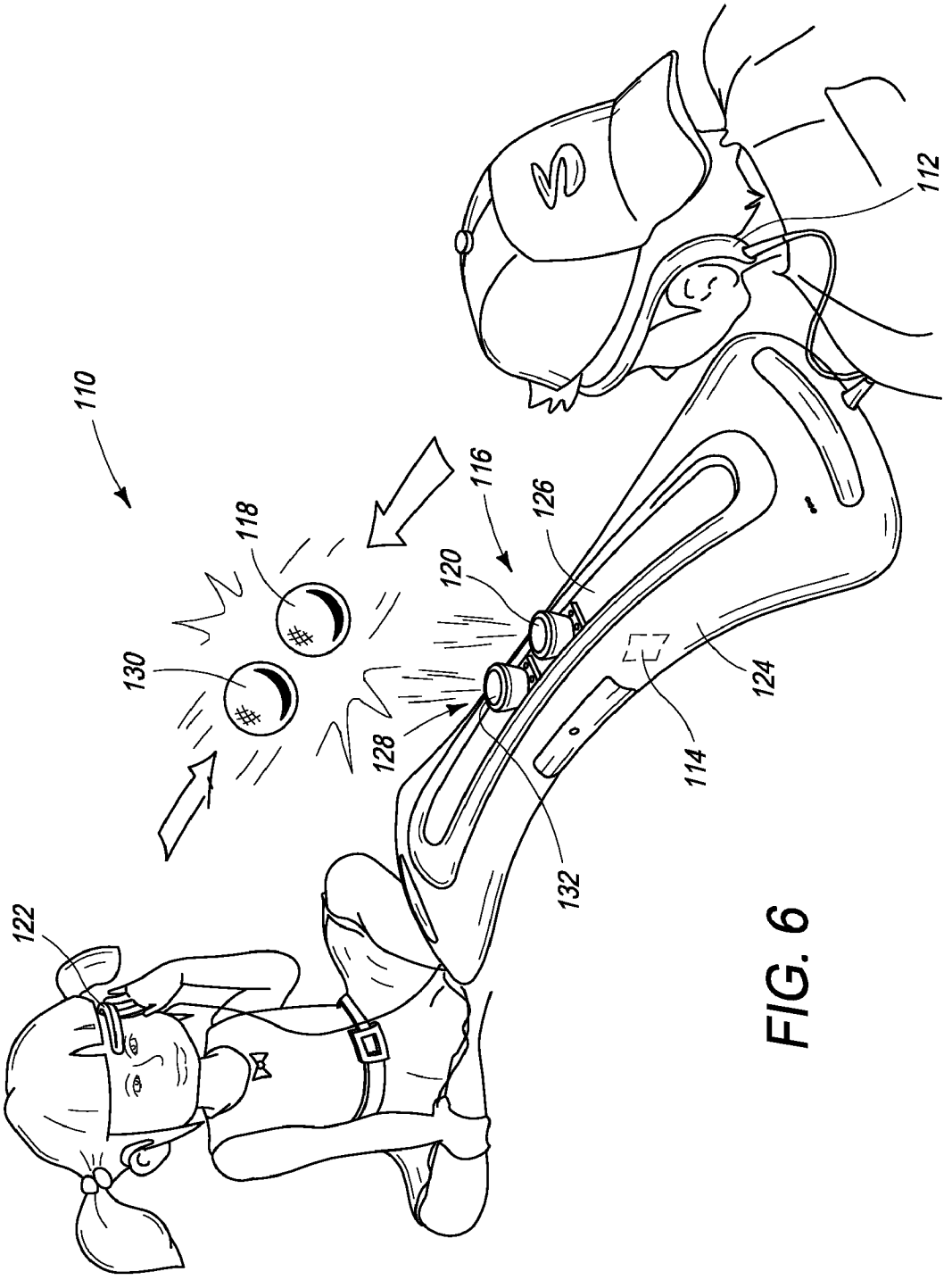


FIG. 6

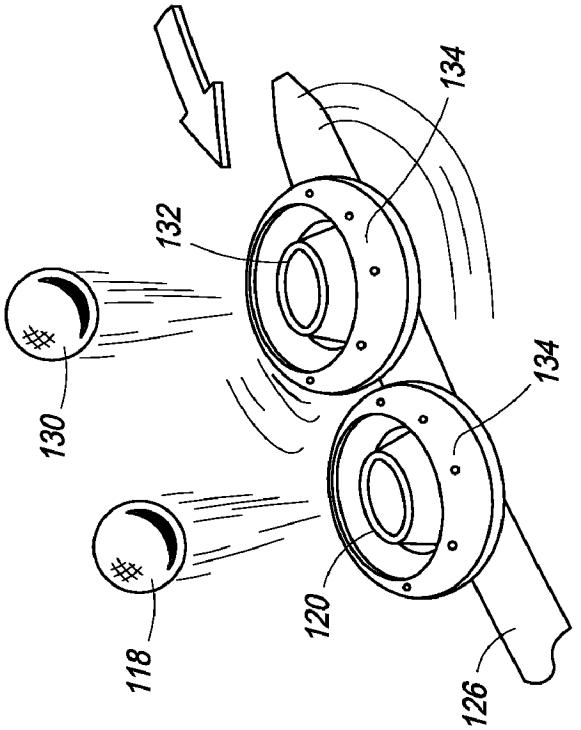


FIG. 7

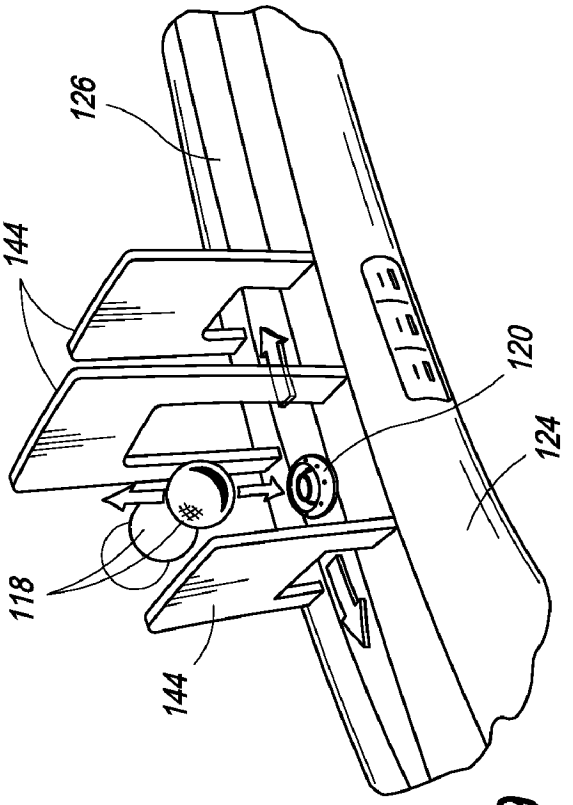


FIG. 9

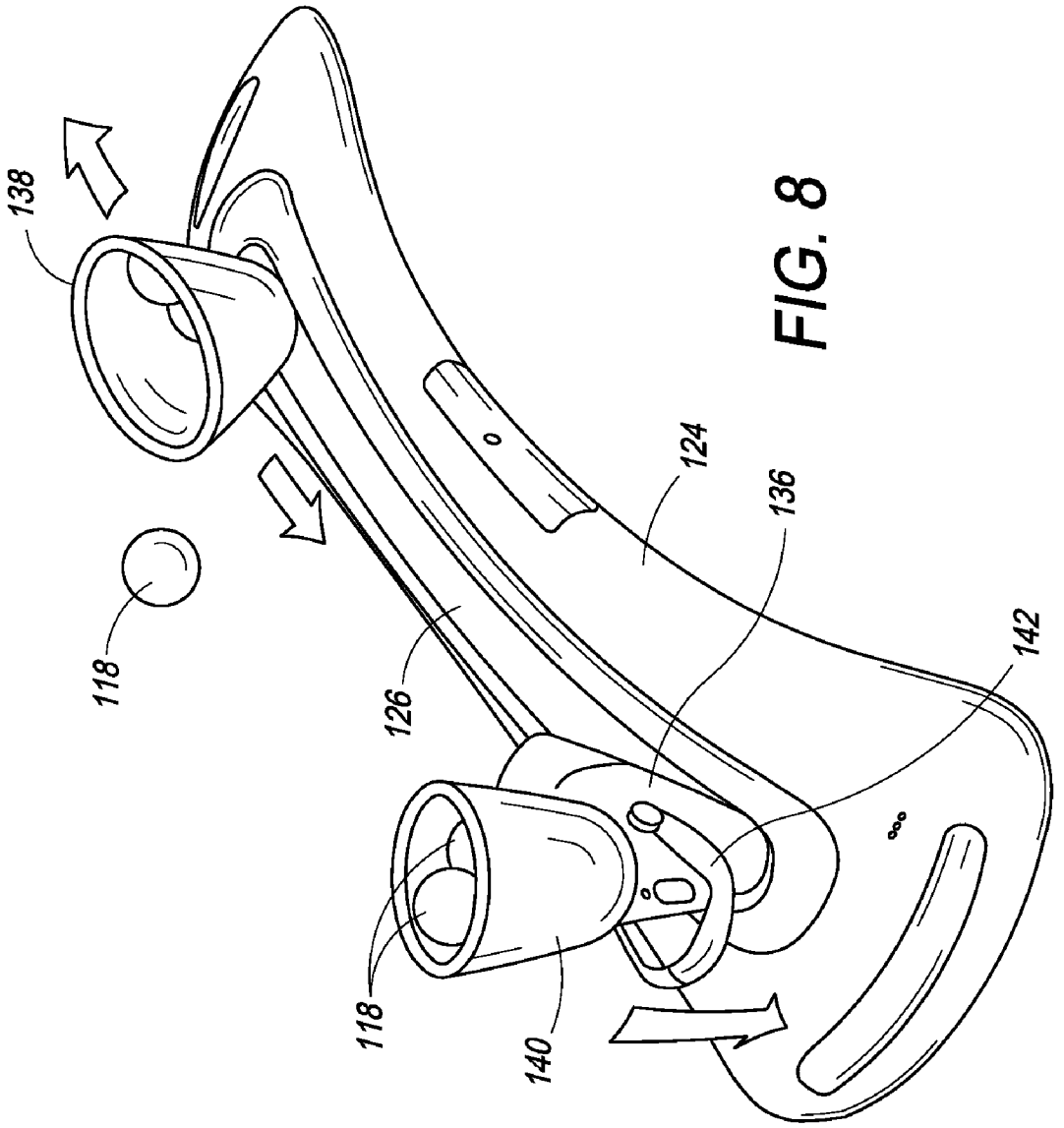


FIG. 8

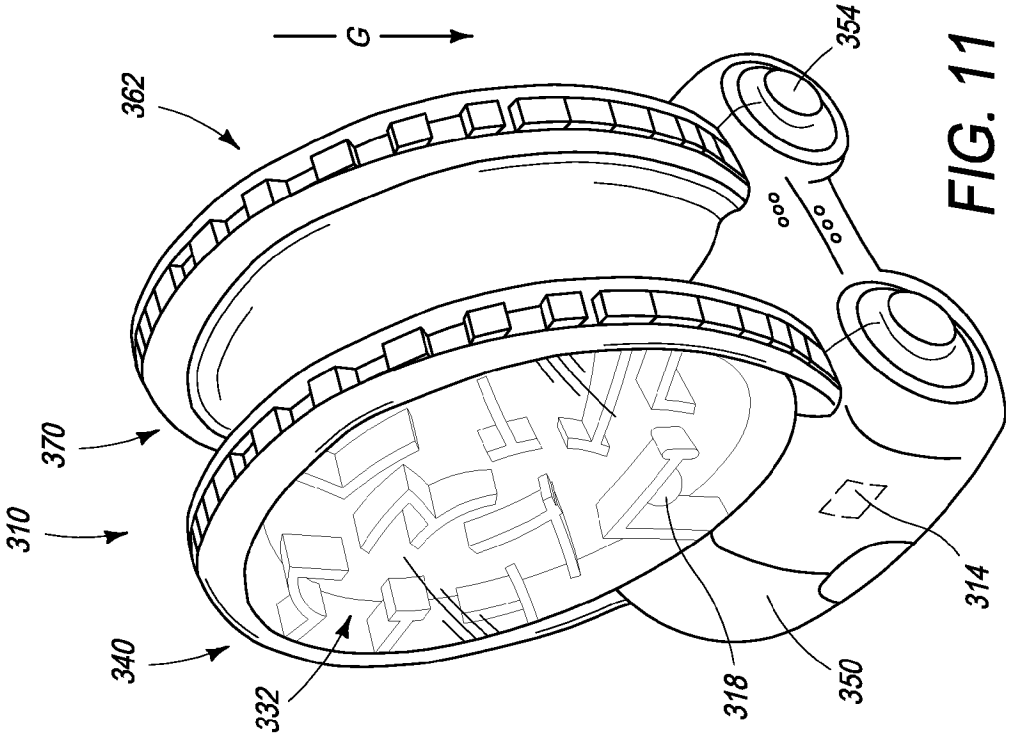

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FIG. 11

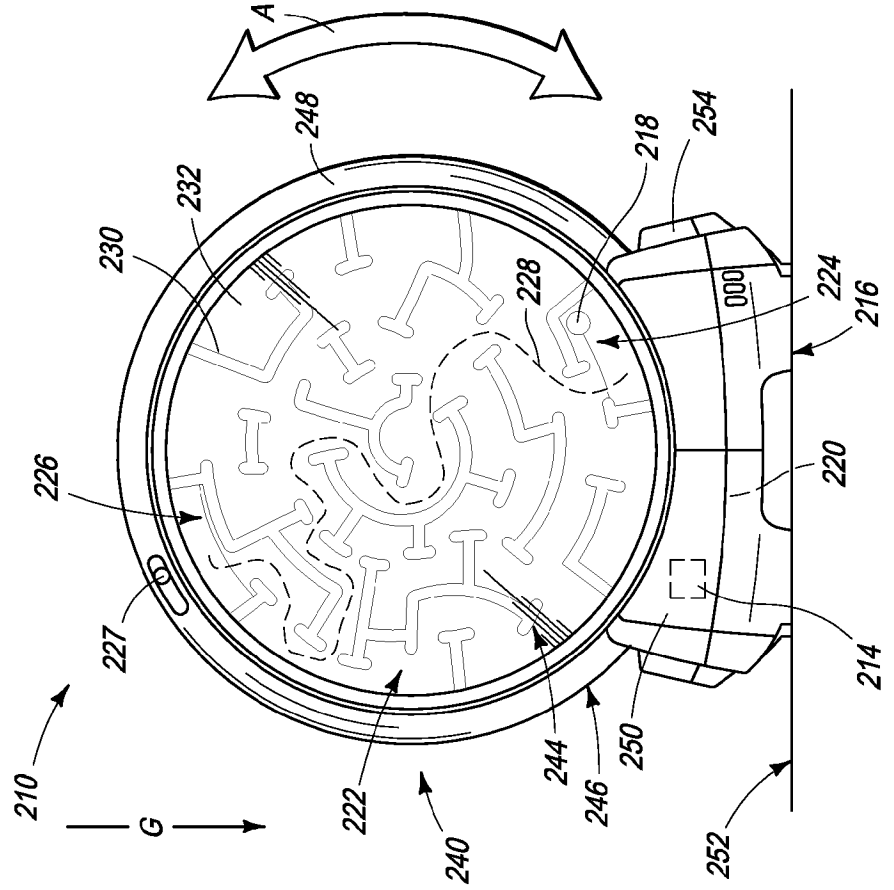
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FIG. 10

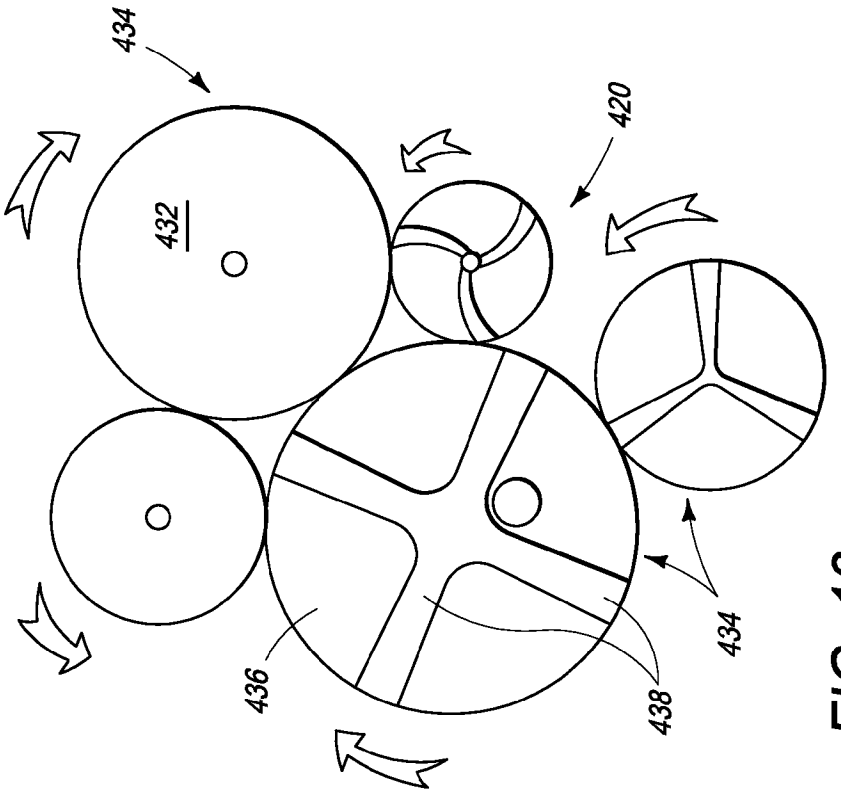
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FIG. 13

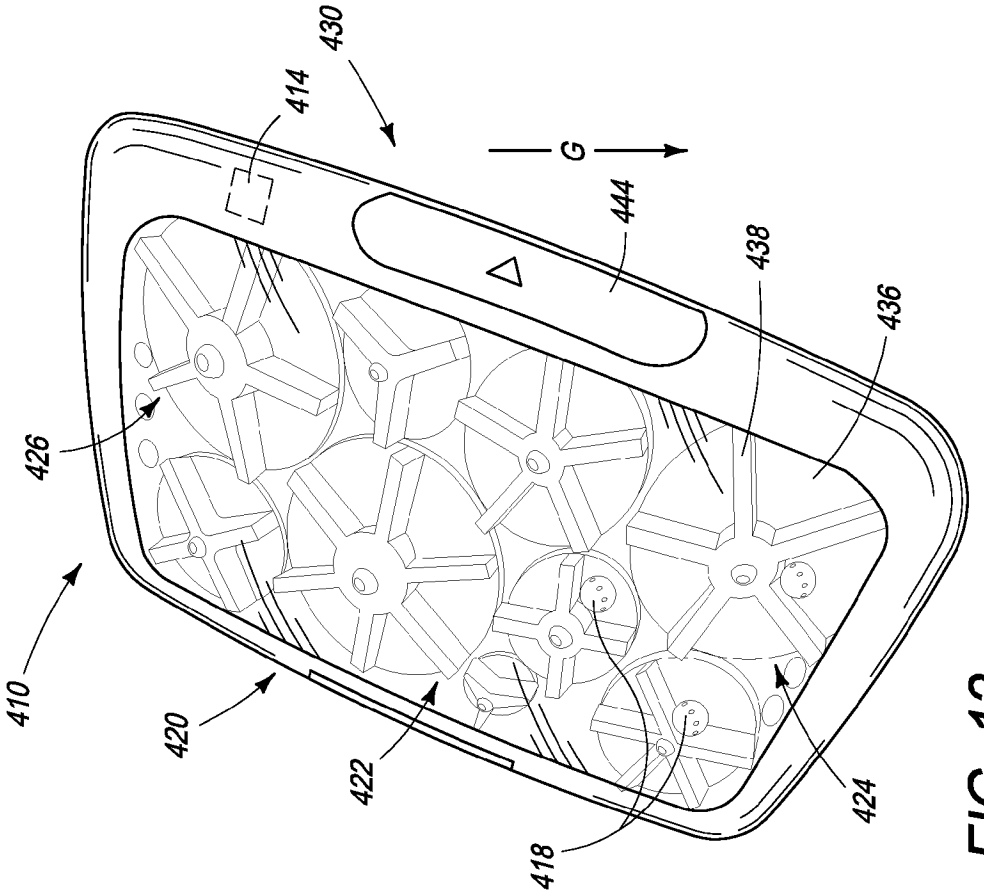
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FIG. 12

MIND-CONTROL TOYS AND METHODS OF INTERACTION THEREWITH

CROSS REFERENCE TO RELATED APPLICATIONS

This application claims priority under 35 U.S.C. §119(e) to U.S. Provisional Patent Application Nos. 61/106,560, filed on Oct. 18, 2008, entitled "TOY," and 61/204,651, filed on Jan. 7, 2009, entitled "TOY." The disclosures of these provisional applications are incorporated herein by reference.

BACKGROUND

Toys exist that allow a user to maneuver an object through a labyrinth or maze. Examples of maze toys in which objects are maneuvered by tilting and/or rotating the maze are found in U.S. Pat. No. 2,562,126, U.S. Pat. No. 3,844,562, U.S. Pat. No. 4,219,195, U.S. Pat. No. 4,685,679, U.S. Pat. No. 5,042,808, U.S. Pat. No. 5,213,325, U.S. Pat. No. 6,371,853, and U.S. Pat. No. 7,011,308. Examples of water maze toys are found in U.S. Pat. No. 4,142,724 and U.S. Pat. No. 4,489,939. Examples of aerial maze toys are found in U.S. Pat. No. 7,048,604.

Examples of mind-control devices, toys and games are found in the following patents and patent application publications: U.S. Pat. No. 4,358,118, U.S. Pat. No. 5,213,338, U.S. Pat. No. 5,983,129, U.S. Pat. No. 6,097,981, U.S. Pat. No. 6,190,314, US20070069471, US20070123350, US20080081692, US20080177197 and US20090156925. The disclosures of all the patent applications, patents and other publications recited in this application are incorporated herein by reference in their entirety for all purposes.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** depicts schematically an example mind-control toy.

FIG. **2** shows an example mind-control toy that includes an aerial obstacle course.

FIG. **3** is an isometric view of a levitation mechanism suitable for use with the toy shown in FIG. **2**.

FIG. **4** is an exploded view of an obstacle course embodiment similar to that shown in FIG. **2** that depicts various obstacles and the manner of attaching those obstacles to a base structure.

FIG. **5** depicts an embodiment of a mind-control toy that permits head-to-head competition along a track.

FIG. **6** depicts an embodiment similar to that of FIG. **5** that includes two devices for suspending an object in midair.

FIG. **7** depicts an embodiment similar to that of FIG. **6**, except each device includes a bumper.

FIG. **8** depicts an embodiment similar to that of FIG. **5**, further including a launcher and a receiving that are mountable along the track.

FIG. **9** depicts an embodiment similar to that of FIG. **5** that includes an obstacle course that defines an aerial path, similar to the embodiments of FIGS. **1-4**.

FIG. **10** depicts an example of a mind-control toy that includes a rotating water maze.

FIG. **11** depicts an embodiment similar to that of FIG. **10** which includes two rotating water mazes suitable for a competitive mode of play.

FIG. **12** depicts an example of a mind-control toy that includes a water maze formed by rotating discs.

FIG. **13** depicts an embodiment of rotating discs suitable for use with the toy in FIG. **12**.

DETAILED DESCRIPTION

FIG. **1** depicts schematically a mind-control toy **10** that includes a biosensor **12** configured to detect brainwave activity and generate a first signal based on the detected brainwave activity, and a controller **14** responsive to the first signal to direct a member **16** to effect movement of an object **18**. Brainwave activity may be detected using various mechanisms, such as electroencephalography (EEG) headsets.

In the embodiment shown in FIG. **2**, object **18** is a spherical ball that preferably is hollow and light enough to be suspended in midair using a moderate amount of wind force (e.g., a ping-pong ball). In other embodiments, object **18** may be different shapes and have different compositions. Member **16** in the embodiment of FIGS. **2-4** includes a device **20**, shown particularly in FIG. **3**, for suspending object **18** in midair. In this example, device **20** is a fan, but other devices capable of suspending objects in midair are also contemplated. Controller **14** is responsive to the first signal generated by biosensor **12** to vary output of device **20** to control a suspended height of object **18**, for example, by increasing the velocity of a fan inside of device **20**.

The mind-control toy shown in FIG. **2** also includes a base structure **22** that may be placed on a surface such as a table top so that a user can interact with mind-control toy **10**. An obstacle course **24** includes one or more obstacles **26**, each of which may be removably mountable to base structure **22** so that the obstacles collectively define an aerial path **28** around and through the obstacles. Several examples of obstacles **26** are shown in FIGS. **2** and **4**, and will be discussed further below.

Device **20** may be mounted to base structure **22** so that it is movable along a pathway **30** below aerial path **28**. In some examples, base structure **22** may include controls **31** that are manually operable to move device **20** along pathway **30**. One example of a suitable device **20** is shown in FIG. **3**. Device **20** includes a housing **32** enclosing a fan **34**. Extending from housing **32** is an airflow passage **36**, which terminates in an orifice **38**.

Operation of fan **34** creates an air stream which may be directed through airflow passage **36** and out orifice **38**. Orifice **38** may be oriented such that the air stream may be directed upwardly through orifice **38** and perpendicular to pathway **30**. Controller **14** may be configured to vary the output of device **20** (e.g., vary the strength of the air stream produced by fan **34**) to suspend object **18** within aerial path **28**. Further explanation of device **20** may be found in U.S. Pat. No. 7,048,604, the disclosure of which was incorporated above.

As noted previously, a variety of obstacles may be removably mounted to base structure **22**. For example, and referring to FIGS. **2** and **4**, a launch obstacle **40** is shown defining a first opening **42** at one end, a second opening **44** at an opposite end and a passageway **46** in between. Passageway **46** may be shaped to expel object **18** through second opening **44** when device **20** is positioned below first opening **42** so that the air stream created by fan **34** and expelled through orifice **38** is further directed through passageway **46** and out second opening **44**. A receiving obstacle **48** may be provided to catch object **18** after it is expelled from launch obstacle **40**. In some embodiments, receiving obstacle may have a shape suitable for catching object **18**, such as the funnel shape of the receiving obstacle **48** shown in FIGS. **2** and **4**.

Another example obstacle that may be removably mounted to base structure **22** is a see-saw obstacle **50** that is pivotable along an axis substantially parallel to a top surface **52** of the base structure, see-saw obstacle **50** including two openings at opposite ends with diameters that are smaller than object **18**

so that when object **18** is lowered into a first opening **54** of the two openings that is pivoted upwards, an end of the see-saw with the first opening pivots downwards and an opposite end of the see-saw obstacle with a second opening **56** pivots upwards.

In some embodiments, mind-control toy **10** includes a second biosensor (not shown). The second biosensor may be configured to detect second brainwave activity and generate a second signal based on the detected second brainwave activity. The second signal may be used to control various aspects of mind control toy **10**. For example, controller **14** may be responsive to the second signal to move device **20** along pathway **30** below the aerial path **28**, rather than a user manually moving device **20** along pathway **30**.

A second biosensor may also provide for a user experience that is different than the one experienced using the aerial obstacle course **24** described above. For example, FIGS. **5-9** and FIG. **11** depict head-to-head embodiments of mind-control toys that provide the ability for two or more players to compete against one another, or in some instances, work together, using their minds. Because many of the components of these embodiments are similar, a similar numbering scheme is used (e.g., **10** above is similar to **110** below).

Referring to FIG. **5**, a head-to-head competition mind-control toy **110** includes a first biosensor **112**, similar to biosensor **12** described above, that is configured to detect brainwave activity and generate a first signal. A controller **114**, similar to controller **14** described above, also is provided and is responsive to the first signal to direct a member **116** to effect movement of an object **118**. Member **116** once again includes a device **120** for suspending object **118** in midair that includes a fan (not shown but similar to that of FIG. **3**). As before, other devices for suspending objects in midair are also contemplated.

As noted above, the embodiments shown in FIGS. **5-9** include a second biosensor **122** that is configured to detects second brainwave activity (i.e., from a second player) and generate a second signal. Generating a second signal allows for competitive or cooperative play, depending on the embodiment. Examples of both are described herein and shown in the drawings.

The mind-control toy **110** of FIG. **5** is configured to competitive play. Mind-control toy **110** includes a base structure **124** with a track **126** that extends between two players, one wearing first biosensor **112** and the other wearing second biosensor **122**. Although track **126** is shown in FIGS. **5-9** as being linear, it should be understood that track **126** may form other path shapes, such as circular (similar to FIGS. **1-4**) or serpentine.

Controller **114** may be responsive to at least one of the signals produced by first biosensor **112** and second biosensor **122** to vary output of device **120** to control a suspended height of object **118**. For example, in some embodiments, controller **114** is responsive to both signals to cause device **120** to suspend the object to a height that is proportional to the players' combined concentration level. Additionally or alternatively, controller **114** may cause device **120** to suspend the object to a height that increases as the players' concentration levels approach one another.

Controller may additionally or alternatively be responsive to at least one of the signals produced by first biosensor **112** and second biosensor **122** to alter the location of device **220** on track **126**. For example, in FIG. **5** the biosensors are associated with opposite ends of track **126**. In some such examples, controller **114** is responsive to signals from both biosensors to cause device **120** to move along track **126** towards an end of track **126** associated with the biosensor that is detecting the strongest brainwave activity. In other words, the player that is able to concentrate the hardest is able to bring device **120** towards their end for the win (similar to tug-o-war). In other embodiments, controller **114** is responsive to signals from both biosensors to cause device **120** to move along track **126** towards an end of track **126** associated with the biosensor that is detecting the weakest brainwave activity. The player that concentrates the hardest wins again, but this time they push device **120** towards the other player. In manners such as these, players may compete, with the player that is able to concentrate the hardest typically being the winner.

In some head-to-head and/or cooperative embodiments, such as those shown in FIGS. **6-9**, players may each control their own member to suspend their own object above a device. For example, in FIGS. **6** and **7**, mind control toy **110** includes a second member **128** for effecting movement on a second object **130**. Second member **128** may include a second device **132** for suspending second object **130** in midair above second device **132**. In order to provide each player with control of a member, controller **114** may be responsive to a signal from one of first and second biosensors **112**, **122** to move first device **120** along track **126**, and may be responsive to the signal from the other of first and second biosensors **112**, **112** to move the other, second device **132** along track **126**.

In FIG. **6**, first device **120** and second device **132** are shaped so that when they are close enough to one another, or they collide, the objects (**118**, **130**) that they are suspending are likely to collide when at similar suspended heights. Accordingly, players can compete to attempt to knock the other player's object out from above device **120** or **132**.

FIG. **7** depicts another embodiment, similar to the one shown in FIG. **6**, except that first device **120** and second device **132** each include a bumper **134**. Bumpers may allow first device **120** and second device **132** to collide without affecting levitation of objects **118** or **130**. In some cases, bumpers **134** may be translucent or even transparent, and may include a collision detector (not shown) and a light source (e.g., LED) that flashes when bumper **134** is involved in a collision (e.g., with another bumper **134**).

FIG. **8** depicts another embodiment that includes a launcher **136** and a receiver **138** that are somewhat similar to the launch obstacle **40** and receiving obstacle **48** of FIGS. **1-4**. Here, launcher **136** and/or receiver **138** may be movable along track **126**, either in response to signals received from biosensors (**112**, **122**) or in response to manual commands received at manual controls **148**. After placing object **118** into launcher **136** (e.g., by loading a supply of objects into a basket **140**), a player may "power up" launcher **136** to a certain level by concentrating while wearing a biosensor. Once launcher **136** is powered up, the player may actuate a trigger **142** to allow object **118** to be released and launched from launcher **136**. Receiver **138** may be moved along track **126** (using mind or manual control) to catch object **118** after it is launched from launcher **136**.

In yet another embodiment shown in FIG. **9**, obstacles **144** may be placed on track **126** to form an aerial path. Players may then navigate object **118** through the aerial path in a manner similar to the embodiments of FIGS. **1-4**. Obstacles **144** may be removable from track **126**, and may be of various levels of complexity, from the simple barriers shown in FIG. **9**, to the more complex obstacles described above and shown in FIGS. **1-4**.

FIGS. **10-13** show embodiments of mind-control toy **10** that each includes a maze in which a player may maneuver objects by causing at least a portion of the maze to rotate in

response to brainwave activity, thereby reorienting and/or reconfiguring the maze to allow objects to transit the maze by gravitational force.

FIG. **10** depicts a mind-control toy **210** including a controller **214** responsive to a first signal generated by a biosensor, not shown in FIG. **10**, but similar to those described above. Controller **214** directs a member **216** to maneuver object **218** by causing a rotation of at least a portion of the maze **222**. Object **218** is configured to have a size, shape, and density enabling it to transit at least a portion of maze **222** under gravitational force G. In the embodiment of FIG. **10**, object **218** is a spherical ball. In other embodiments, object **218** may be different shapes.

Member **216** includes a device **220** configured to be capable of changing a rate of rotation (indicated at A) of maze **222**. Device **220** may include a motor-driven wheel, but other means capable of changing the rate of rotation of maze **222** are contemplated. In some embodiments, controller **214** is responsive to the first signal generated by biosensor **212**, and directs member **216** to vary output of device **220**, which varies a rate of rotation of maze **222**.

In preferred embodiments of mind-control toy **210**, maze **222** includes a start zone **224** and an end zone **226**, and a plurality of paths (an example of which is indicated at **228**) along which object **218** may move between start zone **224** and end zone **226**. Paths **228** are preferably interconnected, or "branched", as shown in FIG. **10**. However, in some embodiments, maze **222** may lack a defined start zone and end zone, and/or may include one or more unbranched paths **228**, which may be called a labyrinth.

Start zone **224** may include a first object detector, such as an optical sensor, capable of detecting object **218** to generate a first timing mark when object **218** leaves start zone **224**. In some examples, the first timing mark may be generated by a start switch **227**, shown by example in FIG. **10**. End zone **226** may include a second object detector, such as an optical sensor, capable of detecting object **218** to generate a second timing mark when object **218** enters end zone **226**. Mind-control toy **210** may also include a timer to measure an elapsed time after a first timing mark, and a timing display capable of reporting the elapsed time after a first timing mark and/or the elapsed time between a first timing mark and a second timing mark for object **218** to transit maze **222** from start zone **224** to end zone **226**.

Paths **228** in maze **222** may be delimited by one or more barriers **230** that block movement of object **218**. Barriers **230** may be configured as walls having linear and/or curvilinear geometry, as shown in FIG. **10**, or as posts, fences, or other impediments to movement of object **218**. Barriers **230** having gaps or other openings that allow passage of object **218** may be incorporated as means to configure maze **222** as a plurality of branched paths **228**.

Barriers **230** may be disposed in fixed positions by attachment to a single maze substrate **232**. A maze having changeable paths delimited by moveable barriers **230** is particularly described below as an alternative preferred embodiment.

Maze **222** is preferably configured in two dimensions, which may be rotated about a substantially horizontal axis. Such rotation may occur in a substantially vertical plane and may bring at least a portion of a path **228** substantially into alignment with the gravitational force G, to maneuver object **218** from start zone **224** toward end zone **226**. Nevertheless, embodiments of mind-control toy **210** consistent with the present disclosure may include a maze **222** configured in three dimensions, and means for controlling rotation of maze **222** about more than one axis, to facilitate a transit of object **218** through maze **222** motivated by gravitational force G.

Preferably, mind-control toy **210** includes a frame or chamber **240** configured to enclose object **218** within maze **222**. Preferably, chamber **240** is further configured to hold a fluid **242**, such that maze **222** may be filled with fluid **242**, and object **218** may be required to maneuver through fluid **242** during transit of maze **222**. Fluid **242** is preferably water or an aqueous solution. However, in some examples, fluid **242** may be a fluid medium that has density, viscosity, and/or optical properties different from water. In some examples, chamber **240** may be configured to hold a gas, such as air.

Accordingly, object **218** may have different compositions and different densities compatible with gravitational movement in the fluid **242** or other medium which is used to fill maze **222**. In one embodiment, object **218** is particularly configured to have a density low enough to float in fluid **242** in response to gravitational force G, such that object **218** transits the fluid-filled maze **222** by ascending from lower positions to higher positions. For example, object **218** may be composed of a low-density plastic or other light and water-resistant material. However, in some examples, object **218** may be configured to have a density high enough for it to transit maze **222** by descending from higher positions to lower positions under gravitational force G.

As shown in FIG. **10**, and further depicted for a related embodiment in FIG. **11**, chamber **240** may have a substantially planar, or disc-like shape, including a first front face **244** and a circumferential edge **246**. Front face **244** is preferably transparent, to allow observation of object **218** in maze **222**. Front face **244** may be bordered by a margin **248**, to which edge **246** is joined. Edge **246** and/or margin **248** may be configured to facilitate the ability of device **220** to rotate maze **222**, as described below.

Mind-control toy **210** preferably includes a base structure **250** configured to moveably hold chamber **240** in a vertical orientation substantially aligned with the gravitational force G. Base structure **250** may rest on a flat surface **252**, such as a table, to enable a player to interact with mind-control toy **210**. To enable chamber **240** to be removably mounted on base **250**, base **250** may support chamber **240** along a lower portion of edge **246** and/or margin **248**.

Base structure **250** may be further configured to operationally couple device **220** and chamber **240**. In a preferred embodiment, base structure **250** holds chamber **240** in a vertical orientation, and device **220** is configured to rotate chamber **240** including maze **222** about a substantially horizontal axis, such that a portion of path **228** between start zone **224** and end zone **226** may become substantially aligned with the gravitational force G. In some examples, device **220** may interact with edge **246** to control rotation of chamber **240**. In some examples, device **220** may interact with margin **248** to control rotation of chamber **240**.

Chamber **240** may include modifications to facilitate control by device **220**. In some examples, chamber **240** may have external notches, grooves, or teeth, as shown in the embodiment of FIG. **11**. In some examples, surface of edge **246** and/or margin **248** may have a rough texture and/or be covered by a non-slip material, such as rubber.

Mind-control toy **210** may include a manually operated switch **254** configured to cause device **220** to reverse a direction of rotation of chamber **240** and maze **222**. Switch **254** may be mounted on base structure **250**, as shown in FIG. **10**. A player may use switch **254** to reverse the direction of rotation of maze **222** while separately controlling the rate of rotation of maze **222** by means of brainwave activity detected by biosensor **212**.

FIG. **11** depicts an embodiment of mind-control toy **310** which is similar to the maze mind-control toy **210** described

previously but that is further configured to be suitable for a head-to-head competition between two players. Similar to above, mind-control toy **310** includes a controller **314** and provides for traversal of an object **318** through a first maze **322** having a first start zone **324** and a first end zone **326**. Mind-control toy **310** may include a first chamber **340** configured to enclose first object **318** in first maze **322**.

In addition, mind-control toy **310** includes a second maze **362**, which may be similar to (and in some cases, nearly identical to) first maze **322**, having a second start zone and end zone (which cannot be seen in FIG. **11**), a second object (also not visible in FIG. **11**) configured to transit second maze **362** using gravitational force G, and a second chamber **370** configured to enclose second object **368** in second maze **362**.

Mind-control toy **310** may include a first biosensor to detect a first brainwave activity, as from a first player, and generate a first signal, similar to biosensor **212** above. In addition, a second biosensor may be provided to detect a second brainwave activity, as from a second player, and generate a second signal. Similar to controller **214** described above, controller **314** may respond to the first signal to direct movement of first object **318** in first maze **322** by controlling a rate of rotation of first chamber **340**. Controller **314** may also respond to the second signal to direct member **316** to effect movement of second object in second maze **362** by controlling a rate of rotation of second chamber **370**.

Mind-control toy **310** may include a base structure **350**, similar to base structure **250** above, configured to movably hold chamber **340** in a rotatable manner, and further configured to movably hold second chamber **370** in a rotatable manner. Base structure **350** may include a manually operated switch **354**. A player may use switch **354** to reverse the direction of rotation of maze **322** while separately controlling the rate of rotation of maze **320** by means of brainwave activity detected by a biosensor. A similar switch **354** may be provided to allow a competitor to reverse the direction of rotation of second maze **362**. Preferably, chambers **340** and **370** are held in vertical orientations, disposed back-to-back, as shown in FIG. **11**, and each is rotated about a horizontal axis, as described for chamber **240** above.

FIG. **12** depicts as a further embodiment a mind-control toy **410** including a plurality of rotatable discs **420** that, through sideways interactions, form a variable maze **422** having a start zone **424** and an end zone **426**. Maze **422** may contain multiple start zones **424** and multiple end zones **426**, as shown in FIG. **12**. In some examples of mind-control toy **410**, the start zones **424** and end zones **426** may be operationally interchangeable upon inversion of maze **422**. Mind-control toy **410** further includes one or more objects **418** configured to occupy maze **422** and transit between start zone **424** and end zone **426** using gravitational force G.

Similar to above, mind-control toy **410** includes a biosensor (not shown) that detects brainwave activity, as produced by a player, and that produces a signal based on the detected brainwave activity. Mind-control toy **410** also includes a controller **414** configured to respond to the signal to direct movement of one or more objects **418** in maze **422** by controlling a rate of rotation of one or more discs **420**. Rate of rotation of discs **420** may be controlled using one or more of a motorized wheel, gear, and or pulley.

In a preferred embodiment, mind-control toy **410** includes a chamber **440** configured to hold a fluid medium, such as water or aqueous solution, and at least one object **418** configured to float in the fluid, similar to object **218** of mind-control toy **210** described above. In such embodiment, the object **418** transits the maze from lower positions to higher positions. However, in some examples, at least one object **418** may be configured to have a higher density than the fluid medium, such that it transits maze **422** from higher positions to lower positions. In some examples, chamber **440** may hold a gas, such as air.

As shown in FIG. **12** and more particularly shown in FIG. **13**, discs **420** may have a substantially planar first face **432** and a substantially circular disc edge **434**. Each first face **432** may further comprise a recessed substrate **436** and one or more raised barriers **438** fixed to the substrate **436**. In a preferred embodiment of toy **410**, the raised barriers **438** radiate generally from a center of the first face **432** to substantially adjacent disc edge **434**, such that the first face **432** of each disc **420** constitutes a portion of maze **422**.

Preferably, the plurality of discs **420** are arranged with edges **434** juxtaposed to each other, such that an edge **434** of each disc **420** is juxtaposed with an edge **434** of one or more other discs **420**. Accordingly, the configuration of maze **422** results from particular alignment and/or misalignment of barriers **438** on first faces **434** of adjacent discs **420**. Furthermore, rotation of one or more discs **420** changes the configuration of maze **422** by varying a path by which an object may transit maze **410** between the start zone **424** and end zone **426**.

Each of the plurality of discs **420** may have a particular diameter, a rate of rotation, and may rotate either in a clockwise direction or a counterclockwise direction. As shown in FIGS. **12-13**, maze **422** may include a plurality of discs **420** having different diameters. Maze **422** also may include a plurality of discs **420** rotating in both a clockwise direction and a counterclockwise direction. In some examples, adjacent discs may have opposite directions of rotation, as shown in FIG. **13**. In some examples, discs **420** may rotate all in the same direction. In some examples, discs **420** may have the same rate of rotation. In some examples, discs **420** may have regular diameters and/or different rates of rotation

The embodiment shown in FIG. **12** includes a manually-operated switch **444** mounted on chamber **440**. In some examples, switch **444** is operable to reverse a direction of rotation of one or more of discs **420**. In some examples, chamber **440** may be supported in a substantially vertical orientation by a stand (not shown). In some examples, chamber **440** may be held in the player's hand.

While embodiments of a toy and methods of toy play have been particularly shown and described, many variations may be made therein. This disclosure may include one or more independent or interdependent embodiments directed to various combinations of features, functions, elements and/or properties. Other combinations and sub-combinations of features, functions, elements and/or properties may be claimed later in a related application. Such variations, whether they are directed to different combinations or directed to the same combinations, whether different, broader, narrower or equal in scope, are also regarded as included within the subject matter of the present disclosure. Accordingly, the foregoing embodiments are illustrative, and no single feature or element, or combination thereof, is essential to all possible combinations that may be claimed in this or a later application. Each example defines an embodiment disclosed in the foregoing disclosure, but any one example does not necessarily encompass all features or combinations that may be eventually claimed. Where the description recites "a" or "a first" element or the equivalent thereof, such description includes one or more such elements, neither requiring nor excluding two or more such elements. Further, ordinal indicators, such as first, second or third, for identified elements are used to distinguish between the elements, and do not indicate a

required or limited number of such elements, and do not indicate a particular position or order of such elements unless otherwise specifically stated.

What is claimed is:

1. A mind-control toy, comprising:

a base structure;

an obstacle course that is removably mountable to the base structure to define an aerial path;

a biosensor configured to detect brainwave activity and generate a first signal based on the detected brainwave activity; and

a controller responsive to the first signal to direct a member to effect movement of an object;

wherein the member includes a device for suspending the object in midair above the device,

wherein the device is mounted to the base structure so that it is movable along a pathway below the aerial path; and

wherein the controller is configured to vary the output of the device to suspend the object within the aerial path and the controller is responsive to the first signal to vary output of the device to control a suspended height of the object.

2. The mind-control toy of claim **1**, wherein the obstacle course includes:

a launch obstacle defining first and second openings at opposite ends and a passageway in between, the passageway being shaped to expel the object through the second opening when the device is positioned below the first opening; and

a receiving obstacle shaped to catch the object after it is expelled from the launch obstacle.

3. The mind-control toy of claim **1**, wherein the obstacle course includes a see-saw obstacle that is pivotable along an axis substantially parallel to a top surface of the base structure, the see-saw obstacle including two openings at opposite ends with diameters that are smaller than the object so that when the object is lowered into a first opening of the two openings that is pivoted upwards, an end of the see-saw with the first opening pivots downwards and an opposite end of the see-saw obstacle pivots upwards.

4. The mind-control toy of claim **1**, further comprising:

a second biosensor configured to detect second brainwave activity and generate a second signal based on the detected second brainwave activity;

wherein the controller is responsive to the second signal to move the device along the pathway below the aerial path.

5. The mind-control toy of claim **1**, further comprising:

a maze having a start zone and an end zone;

wherein the member includes a device configured to rotate at least a portion of the maze to maneuver the object from the start zone to the end zone using a gravitational force.

6. The mind-control toy of claim **5**, wherein the controller is responsive to the first signal to vary output of the device to control a rate of rotation of the portion of the maze.

7. The mind-control toy of claim **5**, further comprising:

a chamber configured to enclose the maze; and

a base structure configured to moveably hold the chamber;

wherein the device is configured to rotate the chamber on the base structure about a substantially horizontal axis such that at least a portion of a path between the start zone and the end zone is substantially aligned with the gravitational force.

8. The mind-control toy of claim **7**, wherein the chamber is further configured to hold fluid, and wherein the object is configured to float in the fluid to transit the maze using the gravitational force.

9. The mind-control toy of claim **5**, further comprising a manually-operated switch mounted on the base structure and operable to cause the device to reverse a direction of rotation of the portion of the maze.

10. The mind-control toy of claim **5**, further comprising:

a second biosensor configured to detect second brainwave activity and generate a second signal based on the detected second brainwave activity;

a second maze having a second start zone and a second end zone;

a second member that includes a second device configured to rotate at least a portion of the second maze to maneuver a second object between the second start zone and the second end zone using a gravitational force.

11. The mind-control toy of claim **5**, wherein the maze further comprises a plurality of rotatable discs each having at least a first face and an edge, the first face configured as a portion of the maze and the edge juxtaposed with an edge of one or more other rotatable discs, such that rotation of one or more rotatable discs varies a path between the start zone and the end zone; and the device is configured to rotate one or more of the rotatable discs.

12. The mind-control toy of claim **11**, wherein one or more rotatable discs rotate in opposite directions.

13. The mind-control toy of claim **11**, wherein the plurality of rotatable discs include a range of diameters.

14. The mind-control toy of claim **1**, further comprising a second biosensor configured to detect second brainwave activity and generate a second signal based on the detected second brainwave activity.

15. The mind-control toy of claim **14**, wherein the member includes a device for suspending the object in midair above the device, and the controller is responsive to at least one of the signals to vary output of the device to control a suspended height of the object.

16. A mind-control toy comprising:

a biosensor configured to detect brainwave activity and generate a first signal based on the detected brainwave activity;

a second biosensor configured to detect second brainwave activity and generate a second signal based on the detected second brainwave activity;

a controller responsive to the first signal to direct a member to effect movement of an object; and

a track,

wherein the member includes a device for suspending the object in midair above the device,

wherein the controller is responsive to at least one of the signals to vary output of the device to control a suspended height of the object; and

wherein the controller is further configured to move the device along the track in response to at least one of the signals.

17. The mind-control toy of claim **16**, further comprising:

an obstacle that is removably mountable to the track to define an aerial path;

wherein the controller is responsive to at least one of the signals to vary the output of the device to suspend the object within the aerial path.

18. The mind-control toy of claim **16**, further comprising:

a second member including a second device for suspending a second object in midair above the second device;

wherein the controller is configured to move the second device along the track in response to at least on of the signals.

19. The mind-control toy of claim **16**, wherein the biosensors are associated with opposite ends of the track, and the

controller is further configured to move the device towards an end of the track associated with the biosensor that is detecting the strongest brainwave activity.

20. The mind-control toy of claim **16**, further comprising:

a launcher mounted to the track and including a fan that is responsive to at least one of the signals to expel the object; and

a receiver that is movable along the track and that is shaped to catch the object after it is expelled from the launcher.

21. A mind-control toy, comprising:

a first biosensor configured to detect first brainwave activity and generate a first signal based on the detected first brainwave activity;

a second biosensor configured to detect second brainwave activity and generate a second signal based on the detected second brainwave activity;

a device for suspending an object in midair above the device; and

a controller responsive to at least one of the first and second signals to vary output of the device to control a suspended height of the object.

22. A mind-control toy, comprising:

a biosensor configured to detect brainwave activity and generate a first signal based on the detected brainwave activity;

a controller responsive to the first signal to direct a member to effect movement of an object;

a chamber enclosing a maze having a start zone and an end zone; and

a base structure configured to moveably hold the chamber;

wherein the member includes a device configured to rotate at least a portion of the maze to maneuver the object from the start zone to the end zone;

wherein the controller is responsive to the first signal to vary output of the device to control a rate of rotation of the portion of the maze;

wherein the device is configured to rotate the chamber on the base structure about a substantially horizontal axis such that at least a portion of a path between the start zone and the end zone is substantially aligned with the gravitational force.

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