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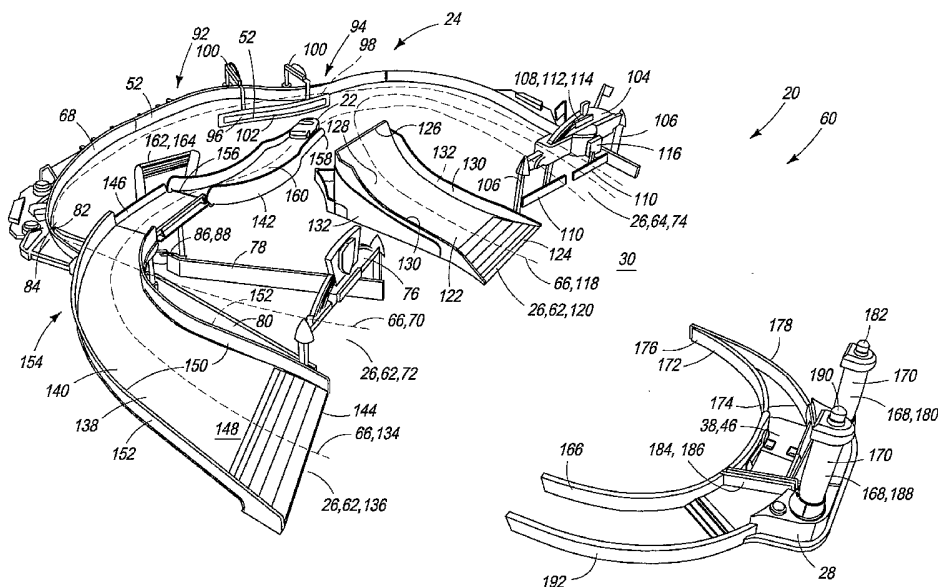
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## TOY VEHICLE PLAYSET AND TARGET GAME

### RELATED APPLICATIONS

The present application claims the benefit of U.S. Provisional Patent  
Application Serial Number 60/688,026, filed on June 6, 2005 and U.S.  
Provisional Patent Application Serial Number 60/691,481, filed on June 16,  
2005, and U.S. Non-Provisional Patent Application Serial No. \_\_\_\_\_ filed on  
June 5, 2006, the complete disclosures of which are hereby incorporated by  
reference herein in their entirety and for all purposes.

### TECHNICAL FIELD

The present disclosure relates to toy vehicle playsets, and more  
particularly to tabletop playsets in which toy vehicles run on a tabletop or  
other playing surface, and railings, ramps, and other accessories direct the  
vehicles around a course.

### BACKGROUND OF THE DISCLOSURE

A playset may include a partially enclosed circuit with a plurality of  
openings that is adapted to be placed on a play surface and one or more  
movable members that may be adapted to redirect a toy vehicle traveling on  
the play surface. Examples of toy vehicle playsets and toy vehicles and  
accessories of the types for use with the present playsets are found in U.S.  
Patent Nos. 2,205,941; 2,683,956; 2,788,613; 2,832,177; 3,218,75;  
3,078,620; 3,228,600; 3,313,242; 3,377,958; 3,442,047; 3,471,963;  
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3,630,524; 3,674,269; 3,703,989; 3,707,805; 3,712,615; 3,735,525;  
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6,343,972; 6,435,929; 6,478,654; 6,575,809; 6,762,586; 6,776,686;  
6,776,685; and 6,830,498; in U.S. Patent Application Publication Nos.  
2002/0068504; 2003/0216102; 2004/0077283; 2004/0090206;  
2005/0112994; 2005/0148281; and 2005/0287919; and in EP0308534;  
5 EP0055225; WO98/04330; WO98/06471; WO2004/045045;  
WO2004/054679; DE3203404; GB2268417A; and in GB2346092A, , the  
entire disclosures of which are all incorporated by reference herein in their  
entirety and for all purposes.

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## SUMMARY OF THE DISCLOSURE

A playset may include a partially enclosed circuit and one or more  
movable members. The partially enclosed circuit may have a plurality of  
openings that define pathways through the partially enclosed circuit for a toy  
vehicle to traverse. The movable members may include a redirecting railing  
15 and one or more generally vertical handles that are adapted to be grasped to  
move the movable member on a play surface to redirect the toy vehicle that  
has exited the partially enclosed circuit to re-enter the circuit. Some  
embodiments may include inclined and/or cantilevered ramps that may be  
adapted to release the toy vehicle at a position above the play surface.  
20 Some embodiments may include lap counters that are adapted to count a  
number of times that the toy vehicle has struck a target or gate.

### BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of a first embodiment of a toy vehicle playset according to the present disclosure.

Fig. 2 is a perspective view of a second embodiment of a toy vehicle playset according to the present disclosure.

Fig. 3 is a perspective view of an entrance of a toy vehicle playset according to the present disclosure.

Fig. 4 is a perspective view of an exit of a toy vehicle playset according to the present disclosure.

Fig. 5 is a perspective view of a cantilevered ramp of a toy vehicle playset according to the present disclosure.

Figs. 6-7 are perspective views of a movable member of a toy vehicle playset according to the present disclosure.

Fig. 8 is a perspective view of a partially enclosed circuit of a toy vehicle playset according to the present disclosure.

Fig. 9 is a partial perspective view of a target of a toy vehicle playset according to the present disclosure.

### DETAILED DESCRIPTION OF THE DISCLOSURE

Playsets in which a toy vehicle runs on a tabletop or other playing surface within a raceway or partially enclosed circuit that simulate operating environments for automobiles and trucks may be operated one or more users or players. Toy vehicle playsets may include by at least one moveable railing having a substantially concave curvature and a partially closed circuit having one or more defined pathways that the toy vehicle may traverse and trigger a scoring counter. A game may be played in which a winner of the game is determined by a player's accrual of the highest score in an allotted time period. Players may also seek to accrue a target relative score, or to play until the vehicle fails to traverse one of the pathways, or until a vehicle runs out of capacitor or battery charge.

Turning now to the drawings, examples of toy vehicle playsets are shown in Figs. 1-2, and are indicated generally at 20. Playsets 20 may

provide an area in which a toy vehicle 22 may be operated. Accordingly, the playsets may include a partially enclosed circuit 24 having at least one opening 26. The playsets may also include at least one movable member 28 that may be placed or operated on a play surface 30 with partially enclosed circuit 24. The openings may be adapted to enable the toy vehicle traveling on the play surface outside the partially enclosed circuit to enter the partially enclosed circuit and/or to enable the toy vehicle that is traveling on the surface within the partially enclosed circuit to exit the partially enclosed circuit.

Toy vehicle 22 may be a miniaturized version of an automobile, a truck, a ship, an airplane, or the like. The toy vehicle may include a plurality of wheels 32 that are adapted to enable the toy vehicle to travel across the play surface without friction. Optionally, the toy vehicle may have a flat undersurface (not shown) that is adapted to glide on a cushion of air that is provided on the play surface, or any suitable alternate means of reducing or eliminating friction between the toy vehicle and the play surface during operation.

The toy vehicle may be propelled by a user pushing it across the play surface, or it may be self-propelled by any means known in the art. For example, the toy vehicle may include an energy storage device 34 that is adapted to store energy and a propulsion element 36 that is adapted to convert the stored energy to motion of the toy vehicle. Energy may be provided to the energy storage device by an energy source 38 that is adapted to produce, store, or convert energy into a form that may be stored by the energy storage device. Energy storage device 34 may be adapted to store any type of energy, such as electrical energy, mechanical energy, chemical energy, thermal energy, and so forth. Propulsion element 36 may be any suitable device to convert the stored energy into motion, such as an electric motor, an arrangement of gears, an engine, etc.

In some embodiments, the toy vehicle may include an energy storing device that is adapted to store electrical energy, such as a capacitor 40, a rechargeable battery 42, and the like. In these embodiments, the propulsion device may be an electric motor 44 that may operate in conjunction with one

or more gears (not shown) to transfer rotational motion of the motor to rotational motion of wheels 32. As they rotate, the wheels may transfer the rotational motion to linear motion of the toy vehicle across play surface 30. A speed at which the toy vehicle travels may depend on the speed at which the electric motor rotates, which, in turn, may depend upon a remaining amount of stored energy in the energy storage device 34, specifically capacitor 40 or rechargeable battery 42.

Energy source 38 may include an energy providing station 46 that is adapted to provide electrical energy to energy storage device 34. The energy providing station may include any common supply of electrical energy, such as batteries, an AC adaptor plugged into a conventional wall outlet, a capacitor, or the like. The energy providing station may be provided as a standalone component, or a component of a vehicle track system, such as the devices disclosed in U.S. Patent Nos. 5,767,655 and 6,036,574, the disclosures of which are hereby incorporated by reference in their entirety and for all purposes. Optionally, the energy providing station may be provided as part of movable member 28, as will be described hereinafter.

In other embodiments, energy storage device 34 may include a mechanical energy storage device such as a spring (not shown) and/or a rubber band (not shown) that may bias a member to cause a gear (not shown) to rotate the wheels. The mechanical energy storage device may be loaded by any suitable means such as by pulling the toy vehicle along the play surface to cause the wheels to rotate and to load the device, by turning a winding post or winding key, and so forth. Still other embodiments may store pressurized gases or fluids, reactive chemicals, etc.

An exemplary toy vehicle 22 may be adapted to travel in a constant direction whenever energy storage device 34 holds sufficient energy to be converted into motion of the toy vehicle. Accordingly, wheels 32 may be coupled to the toy vehicle with one or more fixed axles 48. Other exemplary toy vehicles may be adapted to be steerable, and may accordingly include a steerable axle (not shown). In either example, the direction of travel of the toy vehicle may be changed when a side 50 of the toy vehicle abuts a railing 52.

Referring now specifically to Fig. 1, a first embodiment 60 of a toy vehicle playset 20 having a plurality of openings 26 is shown. In this illustrated example, the openings may be considered entrances 62 and/or exits 64. The entrances may be adapted to enable a toy vehicle 22 that is traveling on the play surface outside the partially enclosed circuit to enter the partially enclosed circuit. Similarly, the exits may be adapted to enable the toy vehicle that is traveling on the surface within the partially enclosed circuit to exit the partially enclosed circuit. Accordingly, each entrance may provide a potential pathway 66, which may enable the toy vehicle to travel through the partially enclosed circuit to a corresponding exit. In some examples, more than one entrance may provide potential pathways to a common exit. The example shown in Fig. 1 has three entrances 62 and three corresponding potential pathways 66 that each lead to a common exit 64.

In some embodiments, a first potential pathway may require the toy vehicle to travel a first distance from the corresponding entrance to the corresponding exit. Similarly, a second potential pathway may require the toy vehicle to travel a second distance from the corresponding entrance to the corresponding exit, the second distance being different from the first distance. Additionally or alternatively, the toy vehicle may take a first amount of time to traverse the first pathway from the corresponding entrance to the corresponding exit, and a second amount of time that is different from the first amount of time to traverse the second pathway from the corresponding entrance to the corresponding exit.

Partially enclosed circuit 24 may include one or more railings 52 that may be adapted to redirect the direction of travel of the toy vehicle. For example, playset 60 may include one or more circuit railings 68 that may be adapted to redirect the toy vehicle that has entered the partially enclosed circuit toward exit 64. Accordingly, one or more circuit railings 68 may define potential pathways 66. Specifically, as shown in Fig. 1, playset 60 has a first pathway 70 that may include a first entrance 72, circuit railings 68, and a circuit exit 74. Circuit railing 68 and/or other components of partially enclosed circuit 24 may be adapted to remain in a substantially fixed position during

play. Some of these components may be adapted to be repositioned on the play surface during play, or may include components that move under the influence of the toy vehicle.

First entrance 72 may include a coupler, such as an arch 76, that may span between a first entrance railing 78 and a second entrance railing 80. The first and second entrance railings may cooperatively form a funnel-shaped entryway to the first pathway. First entrance railing 78 may include a gate portion 82, shown particularly in Fig. 3, that may be adapted to move between an open position, in which a distal end 84 of the gate portion is disposed adjacent to or touching circuit railing 68, and a closed position, in which the distal end of the gate portion is separated from the circuit railing. In some embodiments, the first entrance railing may include a gate bias element 86 that may be adapted to urge the gate portion to the closed position. The gate bias element may include a rubber band 88, a coil spring (not shown) a leaf spring (not shown) and the like. When entering first pathway 70, toy vehicle 22 may be adapted to oppose the gate bias element and to urge gate portion 82 toward the open position, thereby allowing the toy vehicle to travel along circuit railing 68. When it is in the closed position, gate portion 82 may be adapted to prevent the toy vehicle from exiting partially enclosed circuit 24 through first entrance 72. Instead, side 50 of the toy vehicle may abut an outside surface 90 of the gate portion, or of the first railing in general, and may be redirected to other portions of the partially enclosed circuit, or toward another opening 26.

Circuit railing 68 may define a perimeter 92 of the partially enclosed circuit. Accordingly, the distance of travel corresponding to first pathway 70 may be the longest distance of the three potential pathways 66 of playset 60. Circuit railing 68 may define a generally arcuate shape with an S-curve portion 94. Proximal to the S-curve portion, and separated from the circuit railing, the partially enclosed circuit may include a guide railing 96 having a first side 98 that may be adapted to redirect the toy vehicle back onto the circuit railing to travel any remaining distance of the potential pathway. The guide railing may be coupled to circuit railing 68 by one or more couplers,

such as guide arches 100. Optionally, the guide railing may have a second side 102 opposite the first side and distal to circuit railing 68 that may be adapted to redirect the toy vehicle toward the circuit railing when the toy vehicle abuts the second side.

5           Circuit exit 74, as shown particularly in Fig. 4, may include an exit gate such as arch 104 that may span between exit posts 106 that may be coupled to circuit railing 68, or to other components of partially enclosed circuit 24. Circuit exit 74 may also include a lap counter 108 that may be adapted to count a number of times that the toy vehicle exits the partially enclosed circuit  
10           through the circuit exit. As the toy vehicle passes through the circuit exit, it may strike one or more exit gates 110 that may be coupled to a counting mechanism 112 that is adapted to count the number of times the gates have been struck. The counting mechanism may include any suitable mechanical and/or electronic mechanisms, such as ratchet mechanism 114, and may be  
15           adapted to show a count on a visual display 116. In other embodiments, lap counter 108 may be included with any opening 26, such as any entrance 62 or any exit 64, and may be adapted to count a number of times that the toy vehicle has traveled through the opening while entering or exiting the partially enclosed circuit, or both. In some embodiments, each exit gate 110 may be  
20           coupled to a separate counting mechanism 112 that may be adapted to maintain a separate count or score.

          Playset 60 may have a second pathway 118 that is defined by a second entrance 120, at least a portion of circuit railing 68, and circuit exit 74. The second entrance may lead onto an inclined ramp 122 that may have a  
25           first ramp end 124 that is disposed at a position that is level with play surface 30, a second ramp end 126 that is disposed at a position that is above the play surface, and a ramp surface 128 therebetween. The inclined ramp may also include ramp railings 130 on each side 132 of the inclined ramp. The ramp railings may be adapted to keep the toy vehicle from falling off the sides  
30           of the inclined ramp. The inclined ramp shown in Fig. 1 has a straight profile, but other examples may have curved or multi-curved profiles. Optionally, the

inclined ramp may be adapted to be repositioned on the play surface by a user.

Accordingly, inclined ramp 122 may be adapted to propel the toy vehicle airborne, when it is directed into the second pathway through second entrance 120. As is known in the art, the launch angle at which an object, such as toy vehicle 22, is propelled off of an inclined ramp, such as inclined ramp 122, is dependent upon the speed at which the object is traveling. A distance that the object will travel while airborne will depend on the ramp height and the launch angle as well as the speed of travel.

In the example of Fig. 1, the distance that the toy vehicle that has entered second pathway 118 may travel while airborne depends on the speed at which the toy vehicle is traveling, which may depend on the remaining amount of stored energy in energy storage device 34. If the distance is too great, then the toy vehicle may land beyond circuit railing 68, and, as a result, outside the partially enclosed circuit. In this case, it may be considered that the toy vehicle does not follow the potential pathway to its exit.

The toy vehicle that has entered the second pathway may not follow the potential pathway to its exit in other ways. For example, the landing location of the toy vehicle may lie inside the partially enclosed circuit, but the direction of travel of the toy vehicle leads it away from circuit railings 68 that may be adapted to redirect it toward circuit exit 74. Accordingly, the toy vehicle may not exit the partially enclosed circuit or may exit the partially enclosed circuit through another opening 26.

In other examples, upon landing, the toy vehicle may encounter other factors, such as the tops of circuit railings 68 or other elements of partially enclosed circuit 24 that cause the toy vehicle to land on its side or upside down, such that the toy vehicle is unable to travel on the play surface. Additionally, if the energy storage device does not contain a sufficient amount of remaining energy, the speed of the toy vehicle may be insufficient to climb to the top of inclined ramp 122, and may come to a stop on ramp surface 128. Accordingly, for at least one range of remaining energy stored in the energy

storage device, the toy vehicle may not follow the potential pathway to the exit.

Playset 60 may have a third pathway 134 that is defined by a third entrance 136, at least a portion of circuit railing 68, and circuit exit 74. As shown particularly in Fig. 5, the third entrance may lead onto a cantilevered ramp 138 that may have an inclined portion 140 and a cantilevered portion 142. The inclined portion may have a first inclined end 144 that is disposed at a position that is level with play surface 30, a second inclined end 146 that is disposed at a position that is above the play surface, and an inclined surface 148 therebetween. The inclined portion may also include railings 150 on each side 152 of the inclined portion. The railings may be adapted to keep the toy vehicle from falling off the sides of the inclined portion, particularly as the toy vehicle passes through a curved section 154 of the inclined portion.

Railings 150 may be adapted to direct the toy vehicle onto cantilevered portion 142 that may have a first end 156 that may disposed proximal to inclined portion 140, a second end 158 that may be disposed distal to the inclined portion, and a cantilevered surface 160 therebetween. The first end of cantilevered portion 142 may be coupled to the second end inclined portion such that the cantilevered portion is adapted to transition between a raised configuration in which second end 158 is at a position above the play surface, and a lowered configuration, in which second end 158 is at a position level with the play surface. In the raised configuration, the cantilevered portion may be adapted to release the toy vehicle at a position above the play surface. Similarly, at the lowered position, the cantilevered portion may be adapted to release the toy vehicle at a position level with the play surface.

The cantilevered portion may be biased toward the raised configuration. Accordingly, the cantilevered portion may include a bias member 162, such as a rubber band 164, a coil spring (not shown), a leaf spring, or the like. The biasing member may be opposed by a weight of the cantilevered portion and a weight of any object that may be present or traveling on cantilevered surface 156, such as the toy vehicle. The magnitude of the force applied by the opposing weight may depend on a distance on the

cantilevered surface from the opposing weight to first end 156, which may be considered a fulcrum for the lever formed by cantilevered portion 142. Accordingly, the speed at which the cantilevered portion may transition from the raised configuration to the lowered configuration will increase as the  
5 opposing weight of the toy vehicle moves along the cantilevered surface from first end 156 to second end 158.

In the example shown, in which the opposing weight is provided by the toy vehicle as it travels along the cantilevered portion, the cantilevered portion may not have sufficient time to transition to the lowered configuration if the  
10 remaining stored energy, and hence the speed of the toy vehicle, exceeds a predetermined amount. In this case, the cantilevered portion may be adapted to release the toy vehicle at a position above the play surface.

Like the second pathway, the toy vehicle may be adapted to not follow the third pathway to the exit if the remaining amount of stored energy lies  
15 outside at least one predetermined range. If the remaining amount of stored energy is too great, as has been discussed, the cantilevered portion may not have sufficient time to transition to the lower configuration before the toy vehicle reaches second end 158. In this case, the cantilevered ramp may release the toy vehicle as a position that is above the play surface, and the  
20 toy vehicle that has entered the third pathway may land beyond circuit railing 68.

If the remaining amount of stored energy is too low, the toy vehicle that has entered the third pathway may stall on inclined surface 148. Optionally, the landing location of the toy vehicle that has entered the third pathway may  
25 lie inside the partially enclosed circuit, but the direction of travel of the toy vehicle leads it away from circuit railings 68 that may be adapted to redirect it toward circuit exit 74. In other examples, upon landing, the toy vehicle that has entered the third pathway may encounter other factors, such as the tops of circuit railings 68 or other elements of partially enclosed circuit 24 that  
30 cause the toy vehicle to land on its side or upside down, such that the toy vehicle is unable to travel on the play surface.

Referring again to Fig. 1, movable member 28 may include a redirecting railing 166 that provides a substantially convex curvature and one or more generally vertical handle 168 coupled to the redirecting railing. The example shown has two handles that may each have a grip portion 170 for the user to move the movable member on play surface 30 to redirect the toy vehicle toward entrances 62 of partially enclosed circuit 24. The movable member may also include a friction reducing bottom surface (not shown) to reduce the effort required for the user to slide the movable member about the play surface.

10 In some embodiments, the movable member may include energy providing station 46. The energy providing station may be adapted to selectively retain the toy vehicle and to provide energy to energy storage device 34 when the toy vehicle is retained. If the energy storage device is adapted to store electrical energy, then energy providing station 46 may be adapted to provide electrical energy.

The movable member may include a first gate 172 that may be adapted to be transitioned selectively between a redirecting configuration, in which the movable member is adapted to redirect the toy vehicle and a capturing configuration, in which the movable member is adapted to receive the toy vehicle in the energy providing station. First gate 172 of the movable member shown in Fig. 1 may include at least a portion of redirecting railing 166 that may be adapted to rotate about a generally vertical axis at a first end 174 in order to provide the toy vehicle access to energy providing station 46. First gate 172 may be biased toward the redirecting configuration, in which access to the energy providing station may be blocked as a second end 176 of the first gate is in a position proximal to a receiving railing 178. A first handle 180 of the two handles may include an actuator 182 coupled to the first gate. The user, while grasping first handle 180, may press the actuator with a thumb or finger in order to oppose the bias and to rotate first gate 172 into a position that may provide the toy vehicle access to the energy providing station, as shown in Fig. 6.

In other examples, first gate 172 may have a fixed position relative to receiving railing 178, providing the toy vehicle continuous access to energy providing station 46, as long as the user aligns the movable member such that the toy vehicle is directed between the first gate and the receiving railing.

5 Referring again to Fig. 1, second gate 184 may include a blocking member 186 that may rotate about a generally horizontal axis and may be biased toward a lowered position. The blocking member may be adapted to block movement of the toy vehicle when it is disposed within energy providing station when the second gate is in the retaining configuration. A second  
10 handle 188 of handles 168 may include an actuator 190 coupled to second gate 184. The user, while grasping second handle 188, may press actuator 190 with a thumb or finger in order to oppose the bias and to rotate blocking member 186 into a lifted position in which the released toy vehicle may pass under the blocking member, as shown in Fig. 7. In this way, the second gate  
15 may transition from the retaining configuration to the releasing configuration. Movable member 28 may include a second redirecting railing 192 that may provide a substantially concave curvature in order to redirect the released toy vehicle toward entrances 62.

In other examples, the movable member may be adapted to release  
20 the toy vehicle from the energy providing station in other ways. In one non-exclusive example, the movable member may include an element that is adapted to oppose the bias on the blocking member for a predetermined period of time before releasing the toy vehicle. Optionally, the movable member may include a mechanism that may be adapted to determine when  
25 the energy providing station has provided a predetermined amount of energy to the toy vehicle and to automatically release it.

Play patterns with playset 60 may allow multiple players to compete to score a maximum number of points on a turn, as counted by counting mechanisms 112, or to score a predetermined number of points in the  
30 shortest period of time. A turn may last until energy storage device 34 is depleted of sufficient energy to power the toy vehicle, or for a predetermined time limit. Each potential pathway 66, as has been described, may have a

different length, and therefore may require a different amount of time to traverse. Accordingly, the players may opt to redirect the toy vehicle toward the entrance corresponding to the shortest potential pathway 66. However, as has also been described, the toy vehicle, for ranges of remaining energy in energy storage device 34, may be adapted to not follow one or more potential pathways to the exit, such as by landing beyond circuit railing 68, by exiting the partially enclosed circuit through a different opening 26, or by becoming incapacitated by flipping over or getting stuck within the partially enclosed circuit. Accordingly, shorter potential pathways may carry a greater risk of successful passage. In examples where a predetermined time limit is used, or where the game is otherwise timed, a timing mechanism (not shown) may be included.

Referring again to Fig. 2, a second embodiment 200 of a toy vehicle playset 20 is shown. Playset 200 may include a partially enclosed circuit 24' and two movable members 28'. Partially enclosed circuit 24' may include two openings 26 disposed on opposite sides of the partially enclosed circuit and defined by two circuit railings 202 that are disposed on opposite sides of the partially enclosed circuit and between the two openings. Like the openings of partially enclosed circuit 24 shown in Fig. 1, openings 26 of partially enclosed circuit 24' of Fig. 2 may be adapted to enable the toy vehicle traveling on the play surface to enter and to exit the partially enclosed circuit. Similarly, circuit railings 202 may be adapted to redirect the toy vehicle traveling along the surface inside the partially enclosed circuit toward one or both of the openings.

To a first player who is operating a first movable member at a first opening, the first opening may be considered as entrance 62, whereas a second opening may be considered as exit 64. To a second player who is operating a second movable member at the second opening, the opposite may be considered. From the viewpoint of the first player, the toy vehicle may be adapted to travel a potential pathway 66 in a first direction from entrance 62 to exit 64 and in a second direction from exit 64 to entrance 62.

As shown in Fig. 2, circuit railings 202 cooperatively form an hourglass shape wherein a distance 204 between circuit railings 202 at an end 206 proximal to one or both openings is greater than a distance 208 at a central portion 210 of circuit railings 202. In some embodiments, as shown in Fig. 8, distance 204 may be adjustable. Accordingly, circuit railings 202 may be formed from a resilient material. Ends 206 of the circuit railings may be coupled to an adjusting member 212 such as string 214 that is also coupled to a standard 216 disposed at central portion 210. The length of string 214 corresponding to each opening for each circuit railing may be individually adjustable, and/or the length of the string corresponding to both ends of each circuit railing 202 may be simultaneously adjustable.

Referring again to Fig. 2, partially enclosed circuit 24' may also include a coupler, such as target 218, that spans between circuit railings 202, specifically between standards 216, and that couples the circuit railings together. The target may be adapted to be struck by the toy vehicle when the toy vehicle is traveling between the two openings 26, which may be considered opposing entrances 62 and exits 64. The target may have a counting mechanism 220 that is adapted to count a relative number of times that the target is struck by the toy vehicle traveling in each direction.

In some embodiments, as shown in Fig. 9, the target and/or the counting mechanism may include a cylindrical member 222 having a threaded portion 224 and a rotating member 226. The rotating member may be adapted to engage the threaded portion such that the rotating member travels along the cylindrical member between a first end 228 and a second end 230 as the rotating member rotates about the cylindrical member. The target and/or the counting mechanism may also include an elongated portion 232 that is adapted to be struck by the toy vehicle. The elongated portion may be coupled to the rotating member and may be adapted to cause the rotating member to rotate about the cylindrical member when the elongated portion is struck by the toy vehicle. The rotating member may be adapted to move toward the first end when the toy vehicle strikes the elongated portion when the toy vehicle is traveling in the first direction. Similarly, the rotating member

may be adapted to move toward the second end when the toy vehicle strikes the elongated portion when the toy vehicle is traveling in the second direction.

Counting mechanism 220 may include a visual indicator 234 that may be adapted to indicate when a relative count of the target's being struck by the toy vehicle traveling in each direction has reached a predetermined number. For example, the target shown in Figs. 2 and 9 may include a first flag 236 that may be adapted to deploy when rotating member 226 has reached first end 228, and a second flag 238 that may be adapted to deploy when rotating member 226 has reached second end 230.

Flags 236 and 238 may be spring loaded and may be adapted to be propelled away from the cylindrical member when deployed. Optionally, the flags may remain fixed to the cylindrical member and spring into a position indicating that the rotating member has reached the corresponding end. Other examples may use lights (not shown) or other visual indicators instead of, or in addition to flags. The number and/or the pitch of the threads in threaded portion 224 may determine the relative count required to deploy the flags. The target may also include an audible indicator (not shown) that may be adapted to produce a sound when the rotating member has reached the first end or the second end of the cylindrical member.

Referring again to Fig. 2, movable member 28' may include a redirecting railing 240 that provides a substantially convex curvature and one or more generally vertical handles 242 coupled to the redirecting railing. The example shown has two handles that may each have a grip portion 244 for the user to move movable member 28' on play surface 30 to redirect the toy vehicle toward entrances 62 of partially enclosed circuit 24'. The movable member may also include a friction reducing bottom surface (not shown) to reduce the effort required for the user to slide the movable member about the play surface.

Playset 200 may include an energy source 38 in the form of an energy providing station 46. The energy providing station may be a standalone element, like the devices disclosed in U.S. Patent No. 6,036,574. Optionally, the energy providing station may be provided with the movable member, as

has been described herein in reference to playset 60. In this case, movable member 28 of playset 60 may replace one or both movable members 28' of playset 200.

5 Play patterns with playset 200 may include games for two players, with each player having a corresponding opening 26 and movable member 28'. Each player may grasp corresponding movable member 28' to slide it on the play surface to intercept the toy vehicle and to redirect it back through the corresponding opening, and toward the opposing player. The players may strive to trigger the deployment of a corresponding flag of flags 236 and 238  
10 by striking target 218 a predetermined number of times. Players may choose to start the game with the rotating member closer to one side or the other of cylindrical member 222 in order to provide a less skilled player a better chance to win the game.

The game may last until the remaining amount of energy stored by  
15 energy storage device 34 no longer is sufficient to power the toy vehicle. Optionally, movable members 28 shown in Figs. 1, 6-7 may be used with playset 200 in order to provide a method of enabling the players to restore energy to energy storage device 34 during play. One player may play a practice game with playset 200 by placing a first movable member in a  
20 position where it may be adapted to intercept and redirect the toy vehicle at a first opening 26 while the player moves the second movable member at the second opening to redirect the toy vehicle back toward the first opening and the stationary first movable member.

This disclosure may include one or more independent or  
25 interdependent inventions directed to various combinations of features, functions, elements and/or properties. While examples of apparatus and methods are particularly shown and described, many variations may be made therein. Various combinations and sub-combinations of features, functions, elements and/or properties may be claimed in one or more related  
30 applications. Such variations, whether they are directed to different combinations or directed to the same combinations, whether different,

broad, narrower or equal in scope, are regarded as included within the subject matter of the present disclosure.

The described examples are illustrative and directed to specific examples of apparatus and/or methods rather than a specific invention, and  
5 no single feature or element, or combination thereof, is essential to all possible combinations. Thus, any one of various inventions that may be claimed based on the disclosed example or examples does not necessarily encompass all or any particular features, characteristics or combinations, unless subsequently specifically claimed. Where "a" or "a first" element or the  
10 equivalent thereof is recited, such usage 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  
15 such elements unless otherwise specifically indicated.

#### INDUSTRIAL APPLICABILITY

The methods and apparatus described in the present disclosure are applicable to toys, games, and other devices, and industries in which  
20 amusement devices are used.

We Claim:

1. A playset for use by a user on a play surface with a toy vehicle, comprising:
  - a partially enclosed circuit including:
    - 5 an entrance adapted to enable the toy vehicle traveling on the surface to enter the partially enclosed circuit;
    - an exit adapted to enable the toy vehicle traveling on the surface to exit the partially enclosed circuit; and
    - a first circuit railing adapted to redirect the toy vehicle that
  - 10 has entered the partially enclosed circuit toward the exit; and
  - a first movable member that includes a redirecting railing and a first generally vertical handle coupled to the redirecting railing, the first handle having a grip portion for the user to move the movable member on the surface to redirect the toy vehicle traveling on the surface outside of the partially enclosed circuit
  - 15 toward the entrance of the partially enclosed circuit.
2. The playset of claim 1, wherein the redirecting railing provides a substantially concave curvature.
- 20 3. The playset of claim 1, wherein the toy vehicle includes:
  - an energy storage device that is adapted to store energy; and
  - a propulsion element that is adapted to convert the stored energy to motion of the toy vehicle.
- 25 4. The playset of claim 3, wherein the energy storage device is adapted to store electric energy, and wherein the propulsion element includes an electric motor.
5. The playset of claim 4, wherein the energy storage device includes a capacitor.
- 30 6. The playset of claim 4, wherein the energy storage device includes a rechargeable battery

7. The playset of claim 3, wherein the movable member further includes an energy providing station that is adapted to selectively retain the toy vehicle, and is adapted to provide energy to the energy storage device  
5 when the toy vehicle is retained.

8. The playset of claim 7, wherein the energy providing station is adapted to provide electrical energy to the energy storage device.

10 9. The playset of claim 7, wherein the movable member includes a first gate that is adapted to be selectively transitioned between a redirecting configuration, in which the movable member is adapted to redirect the toy vehicle, and a capturing configuration, in which the movable member is adapted to receive the toy vehicle in the energy providing station.

15 10. The playset of claim 9, wherein the first handle includes an actuator coupled to the first gate, the actuator being adapted to be manipulated by a user to transition the first gate from the redirecting configuration to the capturing configuration and from the capturing  
20 configuration to the redirecting configuration.

11. The playset of claim 7, wherein the movable member includes a second gate that is adapted to be selectively transitioned between a retaining configuration, in which the movable member is adapted to retain the toy  
25 vehicle in the energy providing station, and a releasing configuration, in which the movable member is adapted to release the toy vehicle from the energy providing station.

12. The playset of claim 11, wherein the first handle includes an actuator coupled to the second gate, the actuator being adapted to be manipulated by a user to transition the second gate from the retaining  
5 configuration to the releasing configuration and from the releasing configuration to the retaining configuration.

13. The playset of claim 11, wherein the movable member is adapted to redirect the toy vehicle towards the entrance when the toy vehicle  
10 is released from the energy providing station.

14. The playset of claim 13, wherein the movable member includes a second redirecting railing that provides a substantially concave curvature, the second redirecting railing being adapted to redirect the toy vehicle when  
15 the toy vehicle is released from the energy providing station.

15. The playset of claim 1, wherein the movable member further includes a second generally vertical handle coupled to the redirecting railing, the handle having a grip portion for the user to move the movable member on  
20 the surface.

16. The playset of claim 15,  
wherein the toy vehicle includes an energy storage device that is adapted to  
store energy and a propulsion element that is adapted to convert the stored  
5 energy to motion of the toy vehicle;  
wherein the movable member further includes:  
an energy providing station that is adapted to selectively  
retain the toy vehicle, and is adapted to provide energy to the energy storage  
device when the toy vehicle is retained;  
10 a first gate that is adapted to be selectively transitioned  
between a redirecting configuration, in which the movable member is  
adapted to redirect the toy vehicle, and a capturing configuration, in which  
the movable member is adapted to receive the toy vehicle in the energy  
providing station; and  
15 a second gate that is adapted to be selectively  
transitioned between a retaining configuration, in which the movable member  
is adapted to retain the toy vehicle in the energy providing station, and a  
releasing configuration, in which the movable member is adapted to release  
the toy vehicle from the energy providing station  
20 wherein the first handle includes a first actuator coupled to the first gate, the  
first actuator being adapted to be manipulated by a user to transition the first  
gate from the redirecting configuration to the capturing configuration and from  
the capturing configuration to the redirecting configuration; and  
wherein the second handle includes a second actuator coupled to the second  
25 gate, the second actuator being adapted to be manipulated by a user to  
transition the second gate from the retaining configuration to the releasing  
configuration and from the releasing configuration to the retaining  
configuration.

17. The playset of claim 1, wherein the partially enclosed circuit includes a plurality of entrances that each provide a potential pathway, each potential pathway enabling the toy vehicle to travel through the partially enclosed circuit from a corresponding entrance of the plurality of entrances to the exit.

18. The playset of claim 17, wherein the toy vehicle includes an energy storage device that is adapted to store energy and a propulsion element that is adapted to convert the stored energy to a motion of the toy vehicle, wherein a speed of the motion depends upon a remaining amount of stored energy, and wherein, if the remaining amount of stored energy lies outside at least one predetermined range, the toy vehicle does not follow the potential pathway to the exit.

19. The playset of claim 17, wherein the toy vehicle takes a first amount of time to travel from a first entrance of the plurality of entrances to the exit and wherein the toy vehicle takes a second amount of time that is different from the first amount of time to travel from a second entrance of the plurality of entrances to the exit.

20. The playset of claim 17, wherein at least one entrance of the plurality of entrances leads to an inclined ramp that is adapted to propel the toy vehicle airborne.

21. The playset of claim 20, wherein the inclined ramp is adapted to be repositioned on the surface by the user.

22. The playset of claim 17, wherein at least one entrance of the plurality of entrances leads to an cantilevered ramp having a cantilevered portion that is adapted to transition between a raised configuration, in which  
5 the cantilevered portion is adapted to release the toy vehicle at a position above the surface, and a lowered configuration, wherein the cantilevered portion is adapted to release the toy vehicle at a position level with the surface.

10 23 The playset of claim 22, wherein the cantilevered portion is biased toward the raised configuration.

24 The playset of claim 23, wherein the cantilevered portion includes a biasing member adapted to be opposed by a weight of the toy  
15 vehicle traveling upon the cantilevered portion.

25. The playset of claim 24, wherein the toy vehicle includes an energy storage device that is adapted to store energy and a propulsion element that is adapted to convert the stored energy to a motion of the toy  
20 vehicle, wherein a speed of the motion of the vehicle depends upon a remaining amount of stored energy, wherein a speed at which the cantilevered portion transitions to the lowered configuration depends on the speed of the motion of the vehicle.

25 26. The playset of claim 1, further comprising a lap counter that is adapted to count a number of times that the toy vehicle has traveled through at least one of the entrance and the exit.

27. The playset of claim 1, wherein at least a portion of the partially enclosed surface is adapted to remain in a substantially fixed position during  
30 play.

28. The playset of claim 1, further comprising a second movable member,  
wherein the partially enclosed circuit includes a second circuit railing  
opposed to the first circuit railing,  
5 wherein the entrance and the exit are defined by the opposed circuit railings,  
and  
wherein the toy vehicle is adapted to travel in a first direction from the  
entrance to the exit and in a second direction from the exit to the entrance.

10 29. The playset of claim 28, wherein the circuit railings cooperatively  
form an hourglass shape.

30. The playset of claim 29, wherein a distance between the circuit  
railings at one of the exit and the entrance is adjustable.

15 31. The playset of claim 28, further comprising a target adapted to  
be struck by the toy vehicle when the toy vehicle is traveling within the  
partially enclosed circuit in the first direction and in the second direction, the  
target having a counting mechanism that is adapted to count a relative  
20 number of times the target has been struck by the toy vehicle traveling in  
each direction.

32. The playset of claim 31, wherein the target includes a visual  
indicator that is adapted to indicate when a count of the relative number of  
25 times the target has been struck by the toy vehicle traveling in each direction  
has reached a predetermined number.

33. The playset of claim 32, wherein the target includes:  
a cylindrical member having a threaded portion;  
a rotating member that is adapted to engage the threaded  
5 portion such that the rotating member travels along the cylindrical member  
between a first end and a second end as the rotating member rotates about  
the cylindrical member;  
an elongated portion that is adapted to be stuck by the vehicle,  
the elongated portion being operatively coupled to the rotating member and to  
10 cause the rotating member to rotate about the cylindrical member, wherein  
the rotating member is adapted to move toward the first end when the  
elongated portion is stuck by the toy vehicle when the toy vehicle is traveling  
in the first direction, and wherein the rotating member is adapted to move  
toward the second end when the elongated portion is stuck by the toy vehicle  
15 when the toy vehicle is traveling in the second direction.

34. The playset of claim 33, wherein the target further includes:  
a first flag that is adapted to deploy when the rotating member  
has reached the first end; and  
20 a second flag that is adapted to deploy when the rotating  
member has reached the second end.

35. The playset of claim 33, wherein the target is coupled at each  
end to each of the circuit railings.

25

36. The playset of claim 28., wherein each of the circuit railings has  
a central portion disposed between the entrance and the exit, and wherein the  
circuit railings are coupled together at their central portions.

37. A playset for use by a user on a play surface with a toy vehicle, comprising:

a partially enclosed circuit including:

5 a plurality of entrances adapted to enable the toy vehicle traveling on the surface to enter the partially enclosed circuit;

an exit adapted to enable the toy vehicle traveling on the surface to exit the partially enclosed circuit; and

10 at least one circuit railing adapted to redirect the toy vehicle that has entered the partially enclosed circuit toward the exit; and

a movable member that includes a redirecting railing, the movable member having a grip portion for the user to move the movable member on the surface to redirect the toy vehicle traveling on the surface outside of the partially enclosed circuit toward the plurality of entrances.

15

38. A playset for use by two users on a play surface with a toy vehicle, comprising:

a partially enclosed circuit including:

20 two openings disposed on opposite sides of the partially enclosed circuit, the openings being adapted to enable the toy vehicle traveling on the surface to enter and to exit the partially enclosed circuit;

two circuit railings disposed on opposite sides of the partially enclosed circuit and between the two openings, the circuit railings being adapted to redirect the toy vehicle traveling along the surface inside the partially enclosed circuit toward one or both openings; and

25 two movable members that each include a redirecting railing, the movable members each having a grip portion for the users to move the movable members on the surface to redirect the toy vehicle that has exited the partially enclosed circuit back toward one of the two openings.

30

39. A playset for use by a user on a play surface with a toy vehicle, comprising:

a partially enclosed circuit including a pathway that is adapted to enable the toy vehicle in a first direction and in a second direction; and

5 a target adapted to be struck by the toy vehicle when the toy vehicle is traveling along the pathway, the target including:

a cylindrical member having a threaded portion;

a rotating member that is adapted to engage the threaded portion such that the rotating member travels along the cylindrical member  
10 between a first end and a second end as the rotating member rotates about the cylindrical member;

an elongated portion that is adapted to be struck by the toy vehicle when the toy vehicle is traveling within the partially enclosed circuit in the first direction and in the second direction; and

15 a counting mechanism that is adapted to count a relative number of times the elongated portion has been struck by the toy vehicle traveling in each direction.

40. A playset for use by a user on a play surface with a toy vehicle, comprising:

a partially enclosed circuit including a cantilevered ramp having a cantilevered portion that is adapted to transition between a raised configuration, in which the cantilevered portion is adapted to release the toy vehicle at a position above the surface, and a lowered configuration, wherein  
25 the cantilevered portion is adapted to release the toy vehicle at a position level with the surface,

wherein the cantilevered portion includes a biasing member that is adapted to bias the cantilevered portion toward the raised configuration and that is opposed by a weight of the toy vehicle traveling upon the cantilevered  
30 portion.

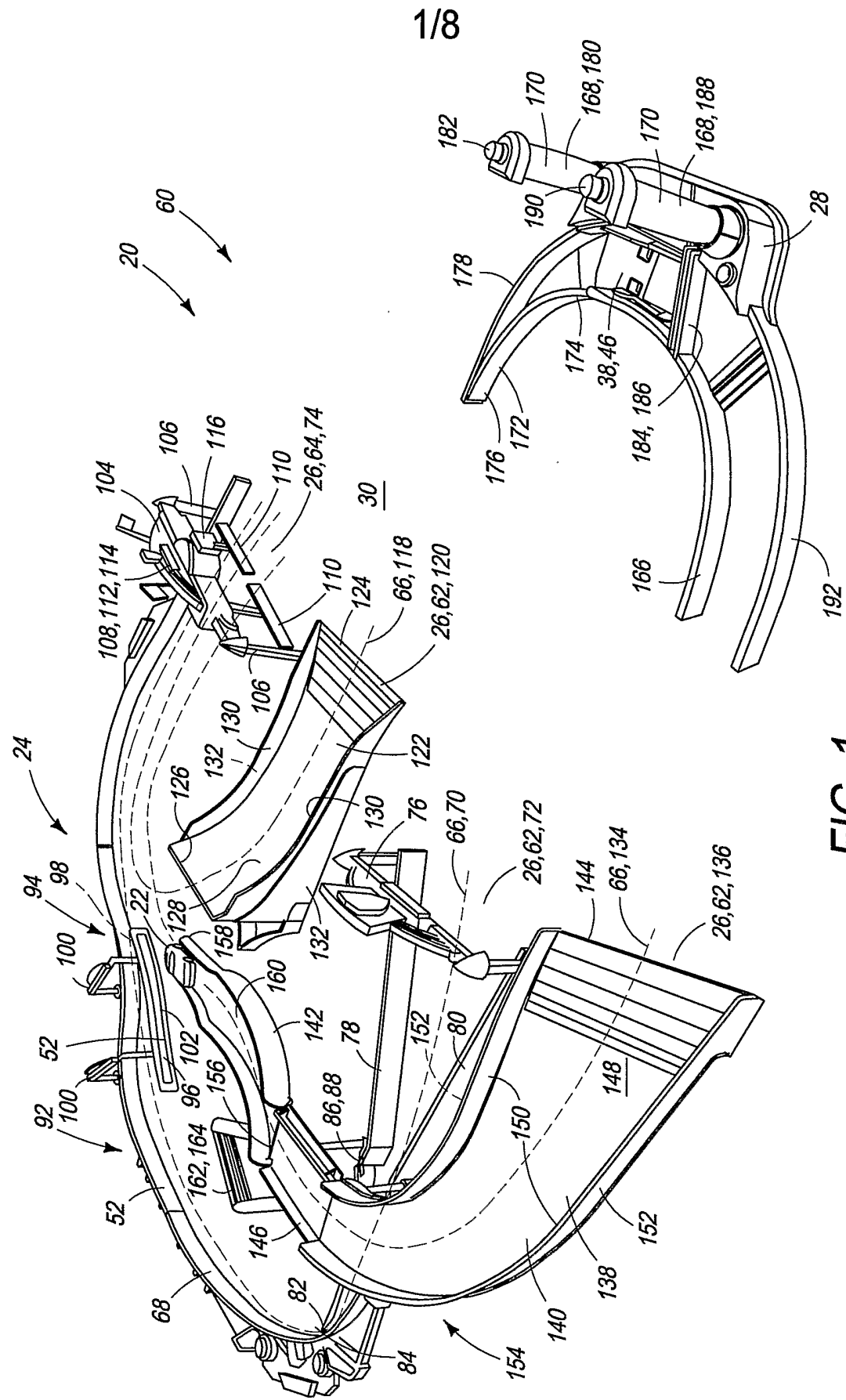
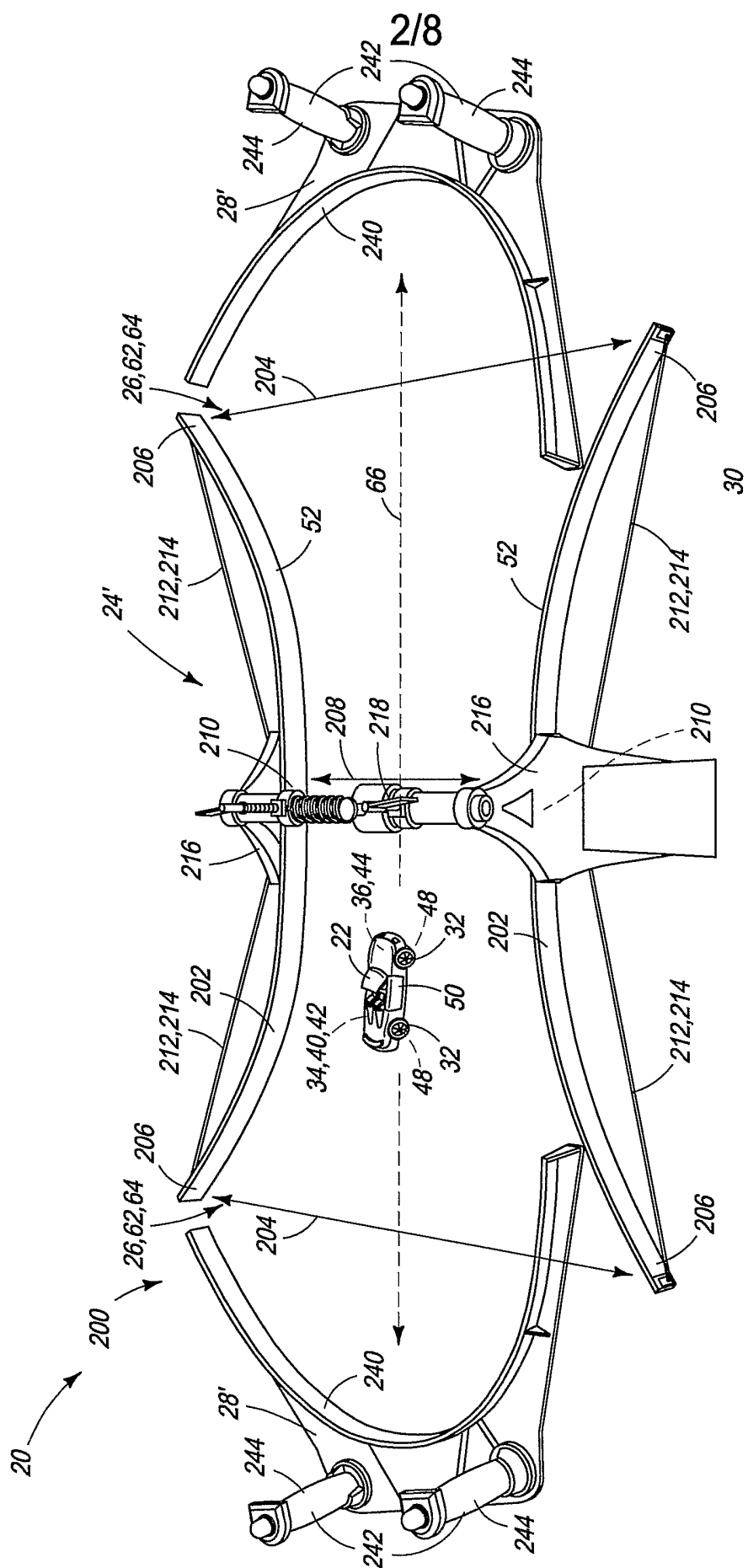


FIG. 1



**FIG. 2**

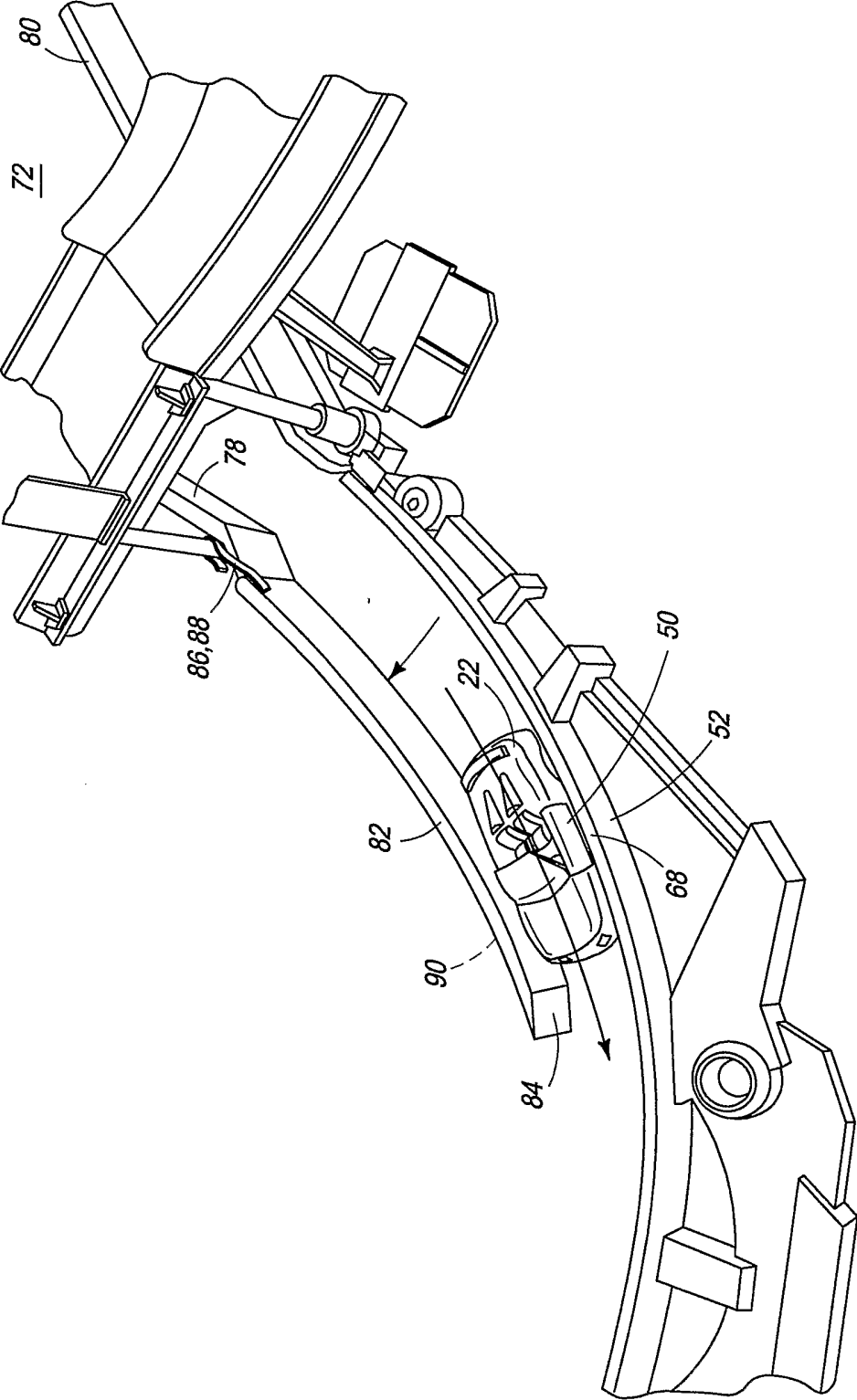


FIG. 3

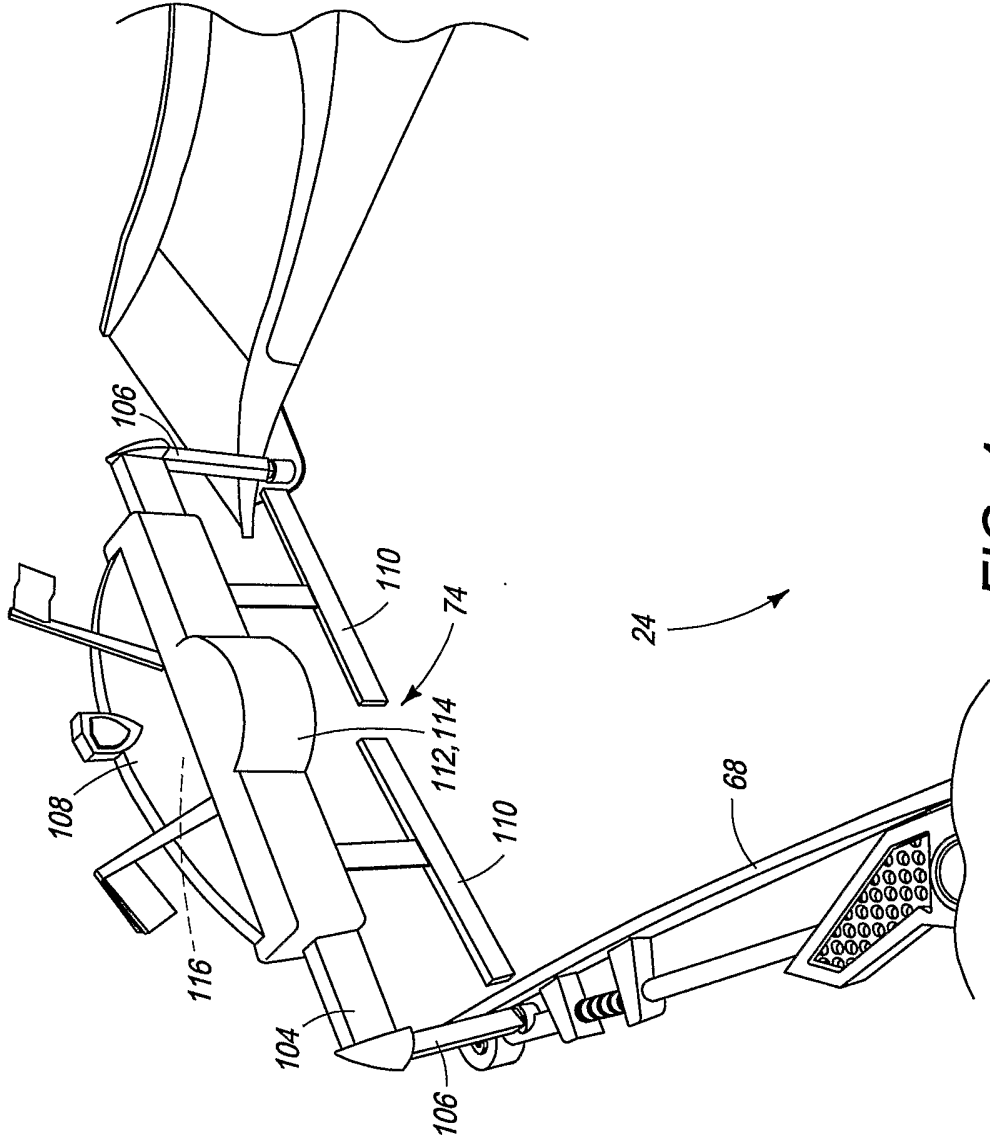


FIG. 4

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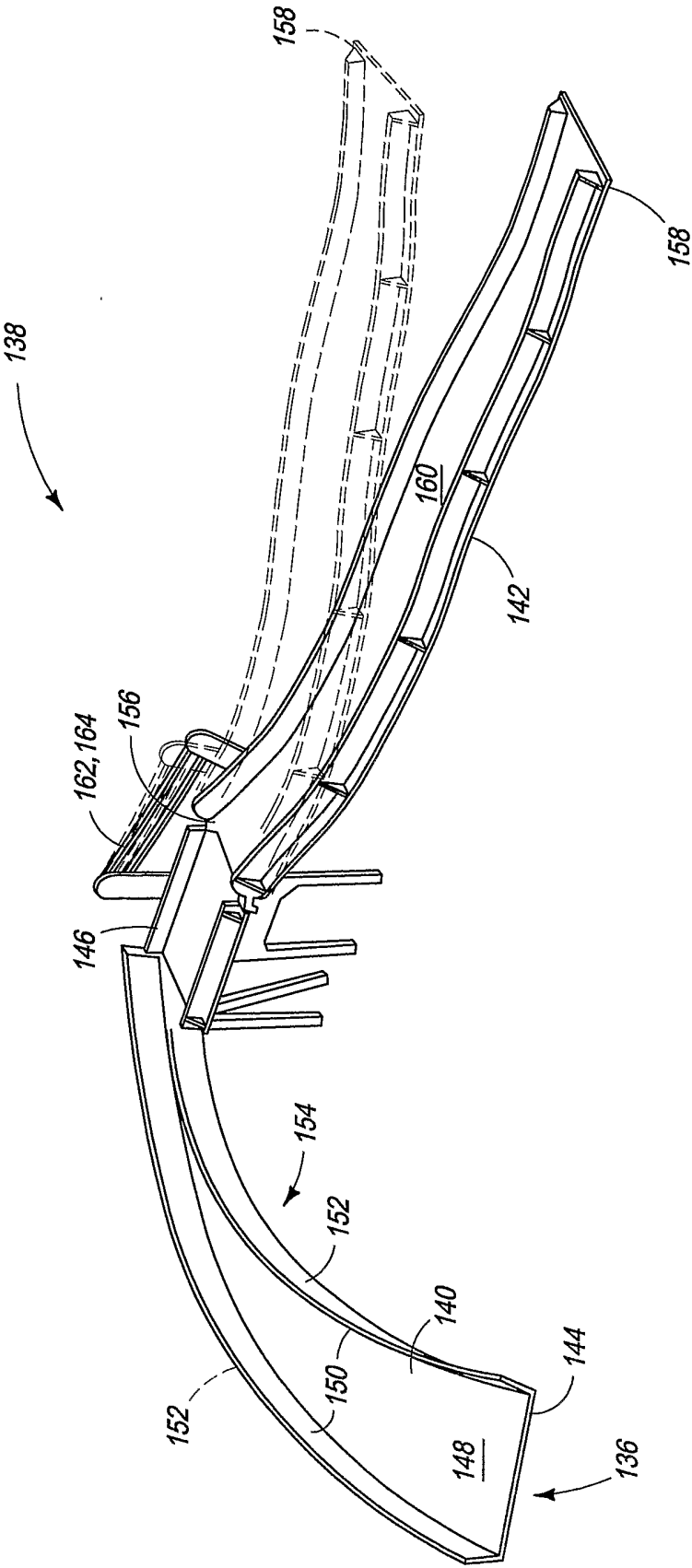


FIG. 5

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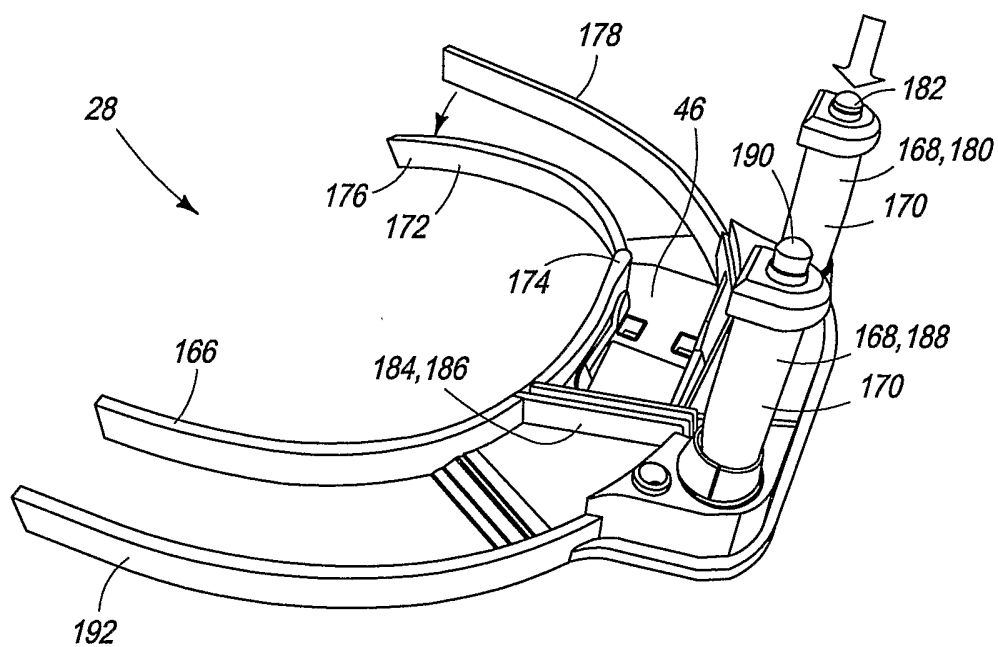


FIG. 6

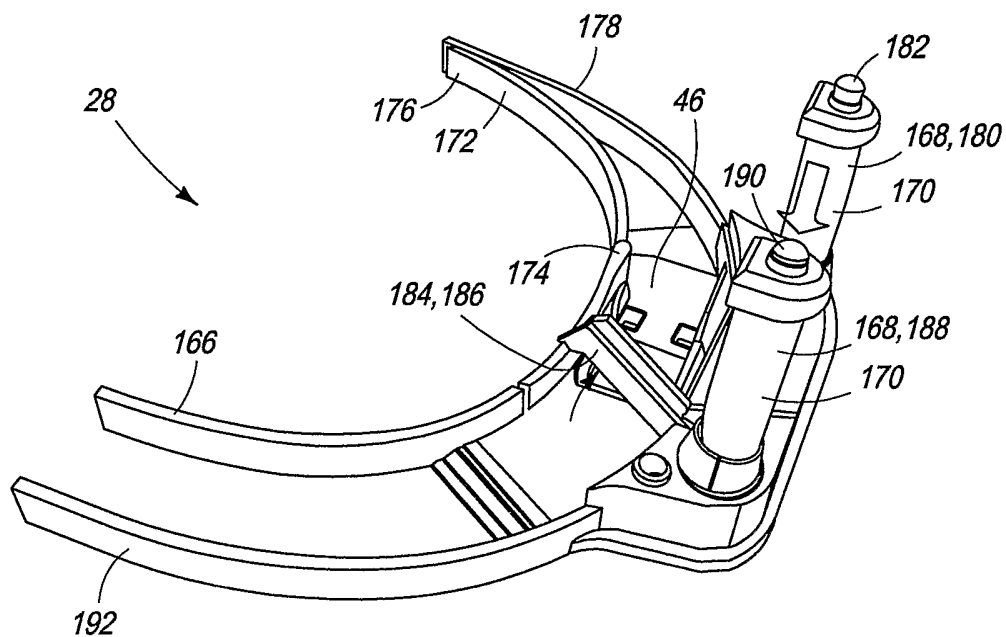


FIG. 7

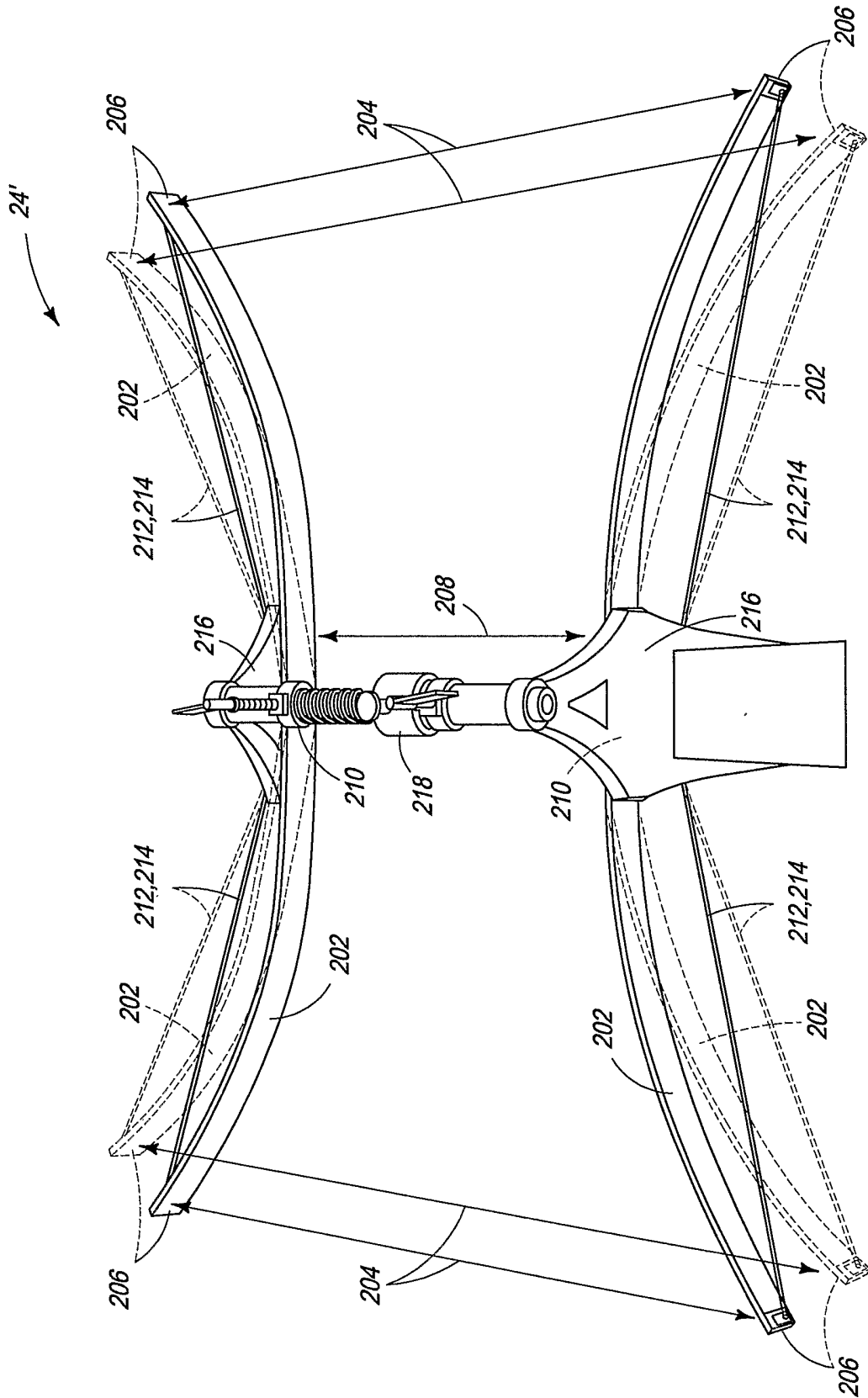


FIG. 8

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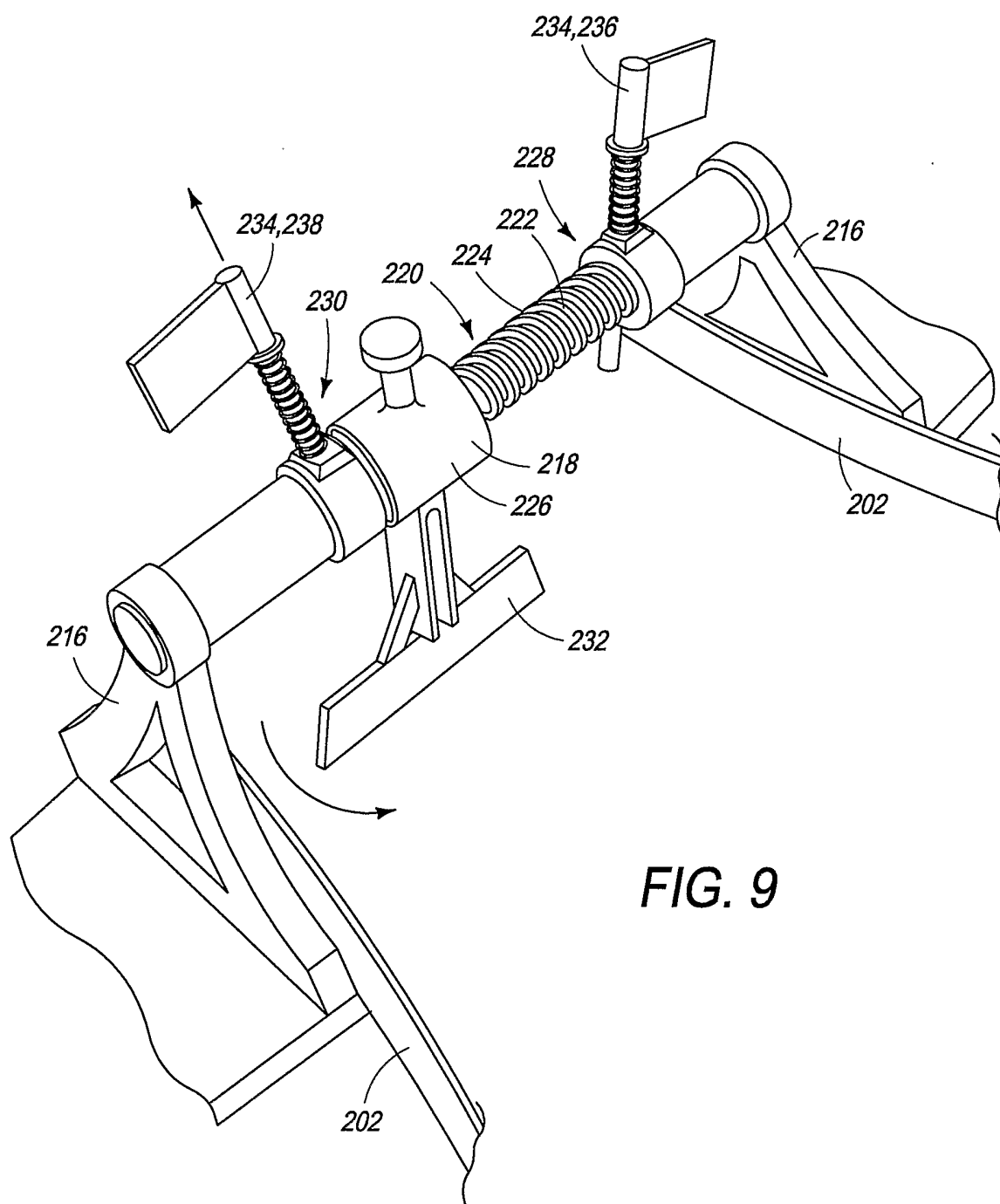


FIG. 9