CLAIMS

The invention claimed is:

1. An apparatus for an amusement park, comprising:

a bogie system positioned on a track, wherein the bogie system is configured to direct motion along the track;

an arm extending radially outward from the bogie system, wherein the arm is rotatably coupled to a body of the bogie system; and

a vehicle configured to carry a passenger and positioned on the arm, wherein the bogie system is configured to move in an operation direction along the track and the vehicle is configured to rotate about the bogie system to change a position of the vehicle with respect to the bogie system, and wherein the vehicle is configured to move radially along a length of the arm.

2. The apparatus of claim 1, wherein the arm comprises rollers, telescoping segments, an adjustable swash plate, or a combination thereof, configured to enable the vehicle to move radially along the length of the arm.

3. The apparatus of claim 1, comprising a plurality of the arms extending radially outward from the bogie system, each arm of the plurality of the arms having a corresponding vehicle coupled thereto.

4. The apparatus of claim 3, wherein the corresponding vehicles are positioned at different locations from one another with respect to the bogie system.

5. The apparatus of claim 3, wherein each of the plurality of the arms is positioned offset from one another with respect to a rotational axis of the body of the bogie system.

6. The apparatus of claim 3, wherein each of the plurality of the arms comprises a blocking device configured to block contact between the corresponding vehicles.

7. The apparatus of claim 1, comprising a controller configured to determine a position of the vehicle relative to the arm and the track.

8. The apparatus of claim 1, comprising a counterweight extending radially outward

from the bogie system in a direction opposite of the arm, wherein the counterweight is rotatably coupled to the body of the bogie system.

9. The apparatus of claim 1, comprising an additional bogie system, an additional arm, and an additional vehicle, wherein the additional bogie system is coupled to the bogie system and is positioned on the track, wherein the additional arm extends radially outward from the additional bogie system, wherein the additional arm is rotatably coupled to an additional body of the additional bogie system, wherein the additional vehicle is positioned on the additional arm, and wherein the additional bogie system is configured to move in the operation direction along the track and the additional vehicle is configured to rotate about the bogie system to change an additional position of the additional vehicle with respect to the bogie system.

10. A system, comprising:

a bogie system positioned on a track, wherein the bogie system is configured to move along the track in an operating direction;

a plurality of arms extending radially outward from the bogie system, wherein each arm of the plurality of arms is individually rotatably coupled to a body of the bogie system, wherein each arm of the plurality of arms is configured to independently rotate about the bogie system with respect to remaining arms of the plurality of arms; and

a plurality of vehicles, wherein each vehicle of the plurality of vehicles is positioned on a corresponding arm of the plurality of arms, and wherein the bogie system is configured to move the plurality of arms and the plurality of vehicles together along the operation direction, and wherein each vehicle of the plurality of vehicles is positioned at different locations with respect to the operation direction.

11. The system of claim 10, comprising a controller configured to control rotation of each arm of the plurality of arms about the body of the bogie system and to control translation of each vehicle of the plurality of vehicles along the corresponding arm.

12. The system of claim 11, comprising one or more sensors configured to send feedback to the controller, wherein the feedback is indicative of a respective position of each vehicle of the plurality of vehicles with respect to the track and with respect to the other vehicles of the plurality of vehicles.

13. The system of claim 11, wherein the controller is configured to send a first signal to an actuator coupled to the body of the bogie system to rotate the plurality of arms about the body of the bogie system, and wherein the controller is configured to send a second signal to an electric motor configured to power rollers, telescoping segments, an adjustable swash plate, or a combination thereof, to translate each vehicle of the plurality of vehicles along the corresponding arm.

14. The system of claim 11, wherein the controller comprises virtual position thresholds configured to block the plurality of vehicles from contacting one another.

15. The system of claim 11, wherein the controller is configured to control rotation of each vehicle of the plurality of vehicles about a respective vehicle axis.

16. The system of claim 15, wherein the controller is configured to rotate each vehicle of the plurality of vehicles about the respective vehicle axis based on a respective position of each vehicle of the plurality of vehicles with respect to the track.

17. An apparatus for an amusement park, comprising:

a first bogie system positioned on a track, wherein the first bogie system is configured to direct motion along the track;

a first arm extending radially outward from the first bogie system, wherein the first arm is rotatably coupled to a first body of the first bogie system;

a first vehicle configured to carry a passenger and positioned on the first arm, wherein the first bogie system is configured to move in an operation direction along the track and the first vehicle is configured to rotate about the first bogie system to change a first position of the first vehicle with respect to the first bogie system;

a second bogie system coupled to the first bogie system and positioned on the track;

a second arm extending radially outward from the second bogie system, wherein the second arm is rotatably coupled to a second body of the second bogie system; and

a second vehicle positioned on the second arm, wherein the second bogie system is configured to move in the operation direction along the track and the second vehicle is configured to rotate about the first bogie system to change a second position of the second vehicle with respect to the first bogie system.

18. The apparatus of claim 17, wherein the first vehicle, the second vehicle, or both are configured to rotate about a vehicle axis based on the operation direction along the track.

19. The apparatus of claim 17, wherein the first vehicle and the second vehicle are configured to independently rotate about the first bogie system to change the first position and the second position, respectively.