CLAIMS:

1. A carousel ride system, comprising:

a first rotatable platform;

a first drive system configured to drive rotation of the first rotatable platform;

a plurality of second rotatable platforms, wherein each second rotatable platform of the plurality of second rotatable platforms is positioned within a respective opening in the first rotatable platform;

a plurality of second drive assemblies configured to drive rotation of the plurality of second rotatable platforms;

a plurality of figures extending over the plurality of second rotatable platforms;

a plurality of figure drive assemblies configured to independently lift and rotate the plurality of figures relative to the plurality of second rotatable platforms; and

one or more processors configured to coordinate operation of the first drive system, the plurality of second drive assemblies, and the plurality of figure drive assemblies to maintain the plurality of figures in a forward-facing orientation relative to a direction of travel of the first rotatable platform during operation of the carousel ride system.

2. The carousel ride system of claim 1, wherein the first drive system comprises a plurality of drive units distributed circumferentially about a first rotational axis of the first rotatable platform, wherein each drive unit of the plurality of drive units comprises one or more wheels and a motor to drive rotation of the one or more wheels.

3. The carousel ride system of claim 2, wherein each drive unit of the plurality of drive units is coupled to at least one other drive unit of the plurality of drive units via a connecting beam.

4. The carousel ride system of claim 2, wherein each drive unit of the plurality of drive units comprises a frame and a support beam that extends from the frame toward a track, and the support beam is configured to provide a gap between a bottom surface of the support beam and the track while a thickness of the one or more wheels is above a threshold.

5. The carousel ride system of claim 4, comprising a sensor coupled to the support beam, wherein the sensor is configured to detect contact or a distance between the bottom surface of the support beam and the track and to generate a signal indicative of the contact or the distance.

6. The carousel ride system of claim 5, wherein the one or more processors are configured to receive the signal and to determine whether to stop the ride operation based on the signal.

7. The carousel ride system of claim 1, comprising a plurality of radially-extending beams, wherein each radially-extending beam of the plurality of radially-extending beams extends radially between a respective first drive assembly of the first drive system and a respective second drive assembly of the plurality of second drive assemblies.

8. The carousel ride system of claim 7, wherein each second drive assembly of the plurality of second drive assemblies comprises a fixed plate that is fixed with respect to a respective radially-extending beam of the plurality of radially-extending beams and a rotatable plate that is rotatable with respect to the respective radially-extending beam of the plurality of radially-extending beams.

9. The carousel ride system of claim 8, wherein each second drive assembly of the plurality of second drive assemblies comprises a wheel assembly comprising a frame that is fixed with respect to one of the fixed plate or the rotatable plate and a motor that is configured to drive a wheel to rotate along a radially-outer surface of the other one of the fixed plate or the rotatable plate.

10. The carousel ride system of claim 1, wherein each figure drive assembly of the plurality of figure drive assemblies comprises a rotation motor that is configured to drive rotation of a pole of a respective figure of the plurality of figures to thereby rotate the respective figure of the plurality of figures.

11. The carousel ride system of claim 10, wherein each figure drive assembly of the plurality of figure drive assemblies comprises a threaded shaft and a lift motor that is configured to drive the threaded shaft to rotate to thereby lift the rotation motor, the pole, and the respective figure of the plurality of figures.

12. The carousel ride system of claim 1, wherein the first drive system is positioned between the first rotatable platform and a ground along a vertical axis, and each second drive assembly of the plurality of second drive assemblies is positioned between a respective second rotatable platform of the plurality of second rotatable platforms and the ground along the vertical axis.

13. The carousel ride system of claim 1, wherein each figure drive assembly of the plurality of figure drive assemblies is positioned between a respective figure of the plurality of figures and a ground relative to a vertical axis and between a respective second rotatable platform of the second rotatable platforms and the ground relative to the vertical axis.

14. The carousel ride system of claim 1, wherein the one or more processors are configured to coordinate operation of the first drive system, the plurality of second drive assemblies, and the plurality of figure drive assemblies such that a first figure of the plurality of figures reaches a peak while positioned forward of a remainder of the plurality of figures on a respective second rotatable platform of the plurality of second rotatable platforms and such that the first figure of the plurality of figures reaches a valley while positioned rearward of the remainder of the plurality of figures on the respective second rotatable platform of the plurality of second rotatable platforms.

15. A method of operating a carousel ride system, the method comprising:

driving rotation of a first rotatable platform about a first rotational axis using a first drive system positioned between the first rotatable platform and a ground relative to a vertical axis;

driving rotation of a plurality of second rotatable platforms about respective second rotational axes using a plurality of second drive assemblies, wherein each second drive assembly of the plurality of second drive assemblies is positioned between a respective one of the plurality of second rotatable platforms and the ground relative to the vertical axis; and

driving rotation and lift of a plurality of figures that extend over the plurality of second rotatable platforms using a plurality of figure drive assemblies positioned between the plurality of second rotatable platforms and the ground relative to the vertical axis and in a coordinated manner to maintain the plurality of figures in a forward-facing orientation during operation of the carousel ride system.