June 12, 1928. 1,672,958

A. SPILLMAN

AMUSEMENT DEVICE

Filed March 5, 1926 3 Sheets-Sheet 1

Fig. 1.

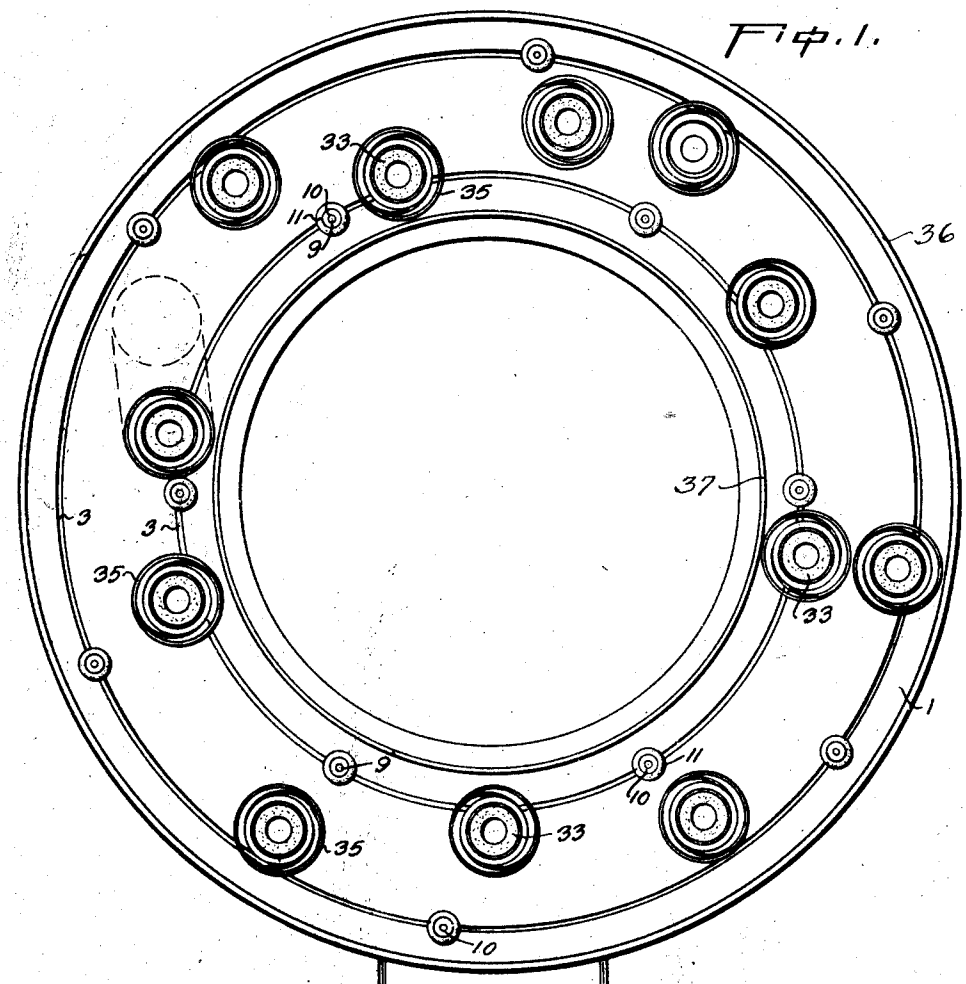
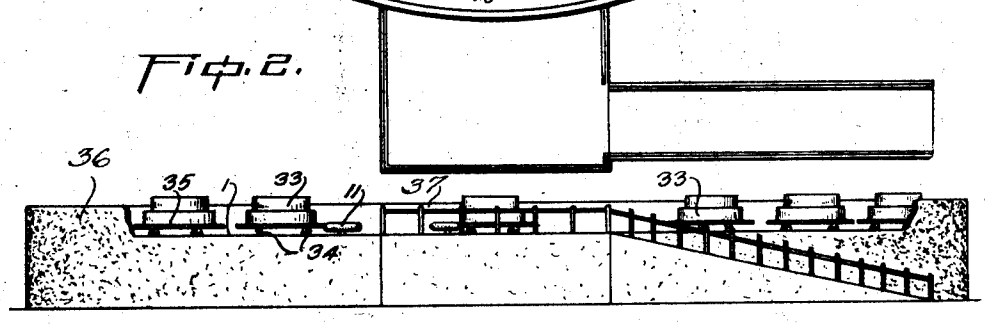


Fig. 2.



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AMUSEMENT DEVICE

Filed March 5, 1926 3 Sheets-Sheet 2

Fig. 3.

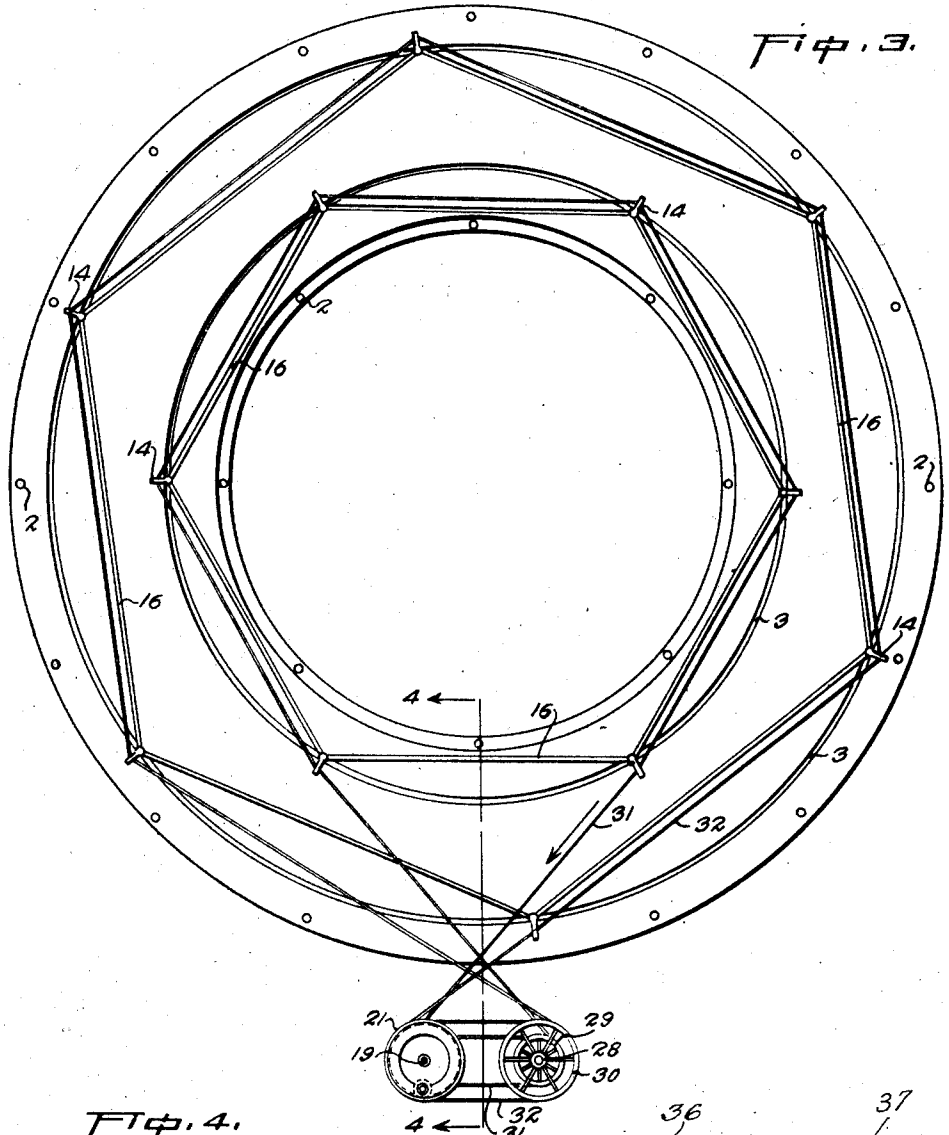
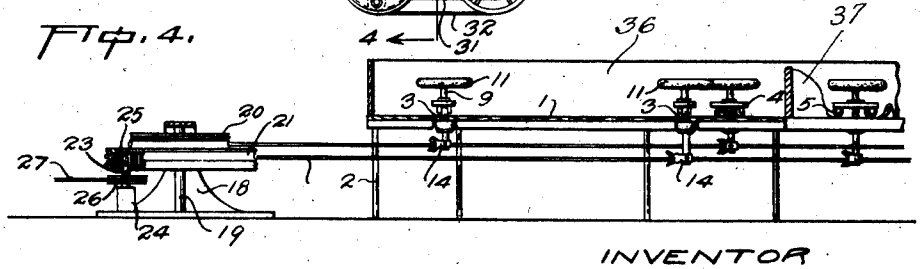


Fig. 4.



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June 12, 1928. 1,672,958

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AMUSEMENT DEVICE

Filed March 5, 1926 3 Sheets-Sheet 3

Fig. 5.

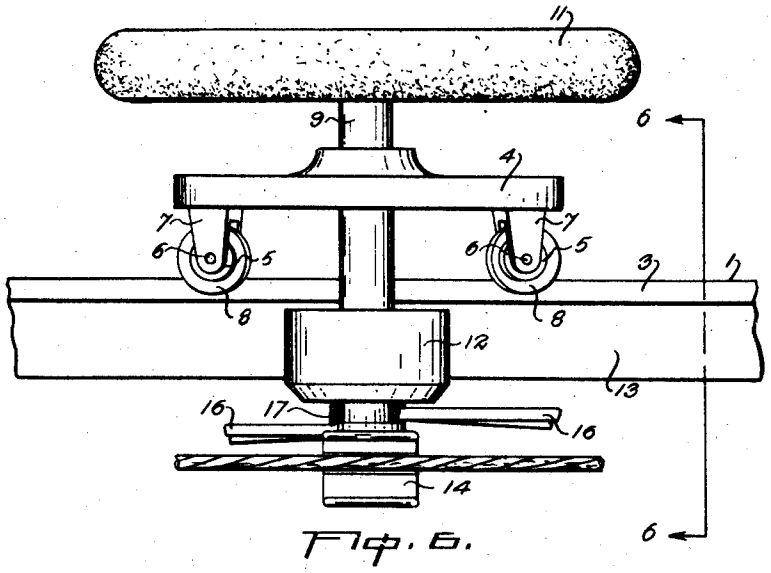


Fig. 6.

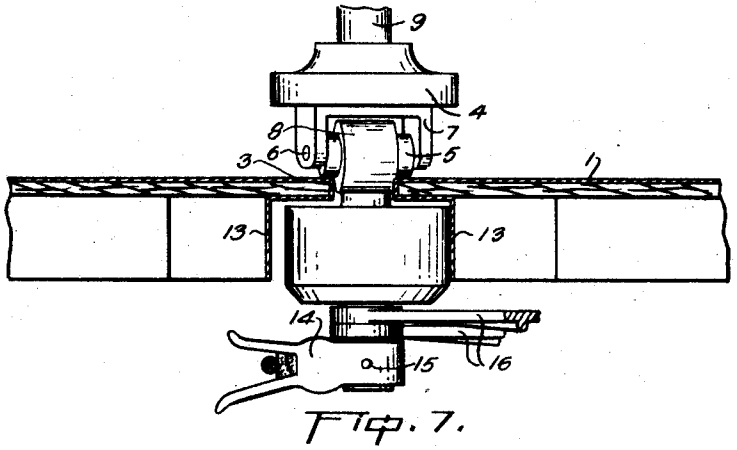
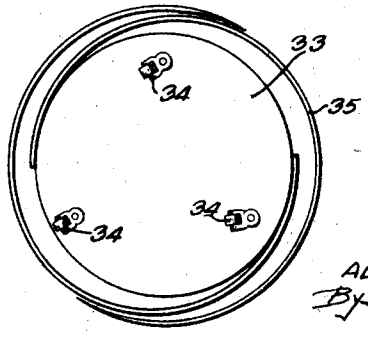


Fig. 7.



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Patented June 12, 1928.

1,672,958

UNITED STATES PATENT OFFICE.

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AMUSEMENT DEVICE.

Application filed March 5, 1926. Serial No. 92,564.

My invention relates to improvements in amusement devices such as are used in amusement parks, pleasure resorts and other similar places and the object of the invention is to provide a platform device upon which are mounted a plurality of independent cars capable of being impelled in any direction upon the platform and which will provide an exciting and exhilarating ride for passengers as well as affording considerable amusement and attraction for onlookers.

A further object of the invention is to provide a plurality of spaced apart car-impelling members traveling around the platform which are adapted to momentarily come in contact with and impel all cars lying in their path. A still further object of the invention is to provide a resilient bumper positioned upon the outside of each car so that the passengers will not be unnecessarily shaken when the cars collide. Another object of the invention is to provide resilient buffers upon the car-impelling members, such buffers being of circular form and preferably pneumatically inflated. Another object of the invention is to provide a plurality of endless slots in the platform along which the car-impelling members travel being actuated by endless cables positioned therebeneath.

My invention consists of an amusement device constructed and arranged all as hereinafter more particularly described and illustrated in the accompanying drawing in which:

Fig. 1 is a plan view of my device.

Fig. 2 is a side elevational view, part of the upper wall being broken away to disclose the cars mounted upon the platform and the car-impelling members which travel thereabout.

Fig. 3 is an inverted plan view of my device showing the cable driving mechanism for propelling the car-impelling members around the platform.

Fig. 4 is an enlarged, vertical, cross-sectional view through the line 4—4 Figure 3.

Fig. 5 is an enlarged, vertical, sectional view of a portion of the platform being taken longitudinally through one of the slots therein and showing one of the car-impelling members mounted on the platform and the cable gripping means which depends from such member through the slot, a portion of the cable being shown thereon.

Fig. 6 is a vertical, sectional view through the line 6—6 Figure 5.

Fig. 7 is an inverted plan view of one of the cars showing the car bumper extending therearound and the casters upon which the car is mounted.

Like characters of reference indicate corresponding parts in the different views.

1 is the platform with can be of any desired formation, being shown round in the drawings and 2 are a plurality of posts upon which the platform is mounted. 3 are a plurality of concentric spaced apart endless slots provided in the platform 1.

A plurality of car-impelling members are mounted upon the platform 1 and adapted to run therearound following the path of the slots 3, each car-impelling member being constructed as follows. 4 is a truck member mounted upon a pair of platform engaging running wheels 5, such wheels being each mounted on a spindle 6 in a forked member 7 which extends from the lower face of the truck member 4. In the center of each platform engaging wheel 5 I provide a flange forming portion 8 which is adapted to extend into the slot 3 and thus cause the truck member 4 to follow the slot. Each truck member 4 is provided with a vertical spindle 9 extending centrally therethrough and secured to such member, the upper portion of the spindle extending above the member 4 and carrying upon its upper end a rotatably mounted disk or wheel 10 upon which is carried a pneumatically inflated tire 11. The lower portion of the spindle 9 projects downwardly through the slot 3, and 12 is a roller rotatably mounted upon the spindle, running between a pair of circular tracks 13 each of inverted L-shape cross section and positioned beneath the platform one on each side of such slot.

Upon the lower end of each spindle 9 a cable engaging jaw 14 is provided, such jaw being adapted to extend radially from the curve of the slot 3 along which its spindle 9 runs, such jaw being secured to the spindle 9 in any suitable manner such as by the pin 15. It will be seen that as the spindle 9 is rigidly secured to the truck member 4 which follows the slot 3 through the medium of the flanged wheels 5 that the jaws 14 will always maintain their radially extending position. For keeping the car-impelling members in each slot in their spaced apart relation I

provide the connecting rods 16 which extend between the adjacent spindles 9 in each slot, the lower ends of such spindles 9 passing through orifices 17 in the ends of the rods 16. 18 is a subsidiary frame positioned in the near vicinity to the platform 1 and in which the cable driving mechanism is mounted, such cable driving mechanism can be of any desired form, it being shown in the drawings constructed in the following manner.

A vertical shaft 19 is journaled in the frame 18 carrying a pair of integrally formed cable pulleys 20 and 21, the pulley 20 being of less diameter than the pulley 21. This pair of integrally formed pulleys, is so constructed that the hub thereof is positioned in the same plane as the upper pulley 20 and has its spokes only connecting therewith; which thus permits the forming of gear teeth upon the inner peripheral face of the lower pulley 21 so that an internal gear is constituted. 23 is a stub shaft journaled in the foot-bearing 24 and carrying upon its upper end a pinion 25 which engages the teeth in the pulley 21. For rotating the stub shaft 23 any suitable means may be provided such as the pulley 26 and cable 27 shown, such cable 27 connecting with any suitable source of power. 28 is a second shaft mounted in the frame 18 in parallel relation to the shaft 19 and carrying upon its upper end a pair of cable pulleys 29 and 30, such pulleys being similarly positioned upon the shaft 28 as the pulleys 20 and 21 are positioned upon the shaft 19. The pulleys 29 and 30 constitute the cable tightening means and may be altered in their spaced apart relation with the pulleys 20 and 21 by any suitable mechanisms, not shown, the cables being wound around the pulleys in the following manner.

On reference to Figures 3 and 4 it will be seen that two separate endless cables 31 and 32 are used, the cable 31 passing from the jaws of the car-impelling members in the inner groove 3 and being wound around the pulleys 20 and 29, and the cable 32 passing from the jaws of the car-impelling members in the outer groove 4 and being wound around the pulleys 21 and 30. As both cables are wound upon the pulleys in the same manner I will only describe the winding of the cable 32. On reference to Figure 3 it will be seen that the cable 32 on leaving the jaws 14 in the direction indicated by the arrow in such figure extends to the pulley 21 passes partially therearound and extending to the pulley 30 from which it passes around in an anti-clockwise direction and extends back to the pulley 21 passing around this for the second time and extending therefrom around the pulley 30 for the second time from where it passes back to the jaws 14 of the preceding car-impelling members.

For insuring that the cable 31 does not come in contact with the cable 32 I make the depending portions of the spindles which project through the inner slot 3 of greater length than the depending portions of the spindles which extend through the outer slot 3 so that the jaws on the end of the inner spindles travel through a lower plane than the jaws on the outer spindles, the distance between such planes being the same as the distance between the pulleys 20 and 21 so that the cables are parallel at all times. By having the driving pulleys 20 and 21 of different diameters it will be seen that one set of car-impelling members can be made to rotate more rapidly than the other set of car-impelling members and so add to the exhilaration imparted by the device.

When the cables 31 and 32 which are of the endless type are properly tensioned they are drawn inwardly against the roots of the jaws 14, a positive driving connection being constituted between the cables and the jaws, the rollers 12 upon the lower ends of the spindles bearing against the inner tracks 13. Upon reference to Figures 1 and 3 of the drawings the operation of my cable drive will be readily appreciated. It will be seen that as the car-impelling members traveling in a clockwise direction approach the cable driving mechanism that the cable will gradually come out of engagement with the jaws 14 passing onto either the pulleys 29 or 30 so that the car impelling members are completely disengaged from the cable in passing the cable driving mechanism again reengaging the jaws 14 upon the far side of the cable driving mechanism as it leaves either the pulley 20 or 21. The rods 16 constitute a means for keeping the car-impelling members in their spaced apart relation and also constitute a means for propelling each car-impelling member past the cable driving mechanism as at this point it is necessarily disengaged from the cable.

My passenger carrying cars 33 are preferably of circular formation being stepped upon the outside to permit the passengers having easy access thereinto, such cars being mounted upon a plurality of casters 34 which will permit the cars rolling in any direction. For lessening the shock of sudden impact I provide the spring bumpers 35 which extend around the lower portions of the cars, such bumpers can be of any suitable structure, the bumper shown in the drawings being of two similar portions each of which extend practically around the car, each inner end being secured thereto and

each outer or free end overlapping the other portion of the bumper. These bumpers are so positioned upon the cars 33 that they are the same height above the platform 1 as the tires 11 upon the car-impelling members and adapted to take the shock of contact therewith.

Upon reference to Figure 1 it will be seen that the diameter of the cars with attached bumpers is such that one car can pass another upon the ring-shaped course of the platform and it will also be seen that the distance from the centers of the outer set of spindles 9 to the outer wall 36 of the platform and the distance from the centers of the inner set of spindles 9 to the inner wall 37 of the platform is less than the radius of the cars including the bumpers so that when a car-impelling member comes in contact with a car it cannot push it around the platform but must impel it in a substantially tangential direction, the car freely moving upon its casters and generally being impelled into the path of the other series of bumpers. For insuring against any possibility of the cars getting into a position whereby they are not in the path of either set of car-impelling members I make the distance between the paths of travel less than the diameter of the bumpers around the cars so that the car is bound to be ultimately impelled irrespective of its position. By rotatably mounting the disks 10 and attached tires 11 upon the spindles 9 a rolling contact will sometimes be effected which will make the cars slowly move out of the path of the impelling member if the direction of the force of impact does not pass through the center of the respective spindle 9.

Although I have only shown two sets of concentric car-impelling members traveling around the platform it will be apparent that I could with equal facility install any required number depending upon the size of the device and the extent of the platform course.

From the foregoing description it will be apparent that I have devised an amusement device of extremely simple construction which will provide great amusement through the erratic movement of the cars as they will bump into each other and be impelled in the most unexpected directions through the sudden impact of the car impelling members and as the sets of car-impelling members are traveling at different speeds a swifter or slower impulse will be given to the cars depending upon their position upon the platform. Furthermore this device also consists of a minimum of parts a great number of which are duplicate so that it can be readily taken apart and assembled which is a very necessary feature in devices of this type which are transported from place to place.

What I claim as my invention is:

1. An amusement device having a platform comprising a course, a plurality of independent passenger carrying cars freely movable over the course, a plurality of car-impelling members adapted to travel around the course and impact the cars, the width of such passenger carrying cars being so proportioned to the width of the course that no car can entirely move out of the path of all the impelling members though the course is of sufficient width to permit one car passing the other.

2. An amusement device having a platform comprising a substantially ring-shaped course bounded by inner and outer concentric walls, a plurality of substantially circular independent disconnected passenger carrying cars freely movable over the course, a car impelling member adapted to travel around the course for impacting and impelling the cars in various directions thereon, the radius of the passenger carrying cars being so proportioned in relation to the shortest distance between the path of travel of the car impelling member and the adjacent wall of the course that the line of force of impact of the car impelling member never passes through the center of the cars.

3. An amusement device having a platform comprising a substantially ring-shaped course bounded by inner and outer concentric walls, a plurality of substantially circular independent disconnected passenger carrying cars freely movable over the course, a car impelling member adapted to travel around the course for impacting and impelling the cars in various directions thereon, the radius of the passenger carrying cars being so proportioned in relation to the shortest distance between the path of travel of the car impelling member and the adjacent wall of the course that the line of force of impact of the car impelling member always passes through the portion of the impacted car between its center and the portion of its circumference nearest to the adjacent boundary wall of the course.

4. An amusement device having a platform comprising a substantially ring-shaped course bounded by inner and outer concentric walls, a plurality of substantially circular disconnected independent passenger carrying cars freely movable over the course, a plurality of car impelling members adapted to travel around the course, the diameter of such passenger carrying cars being so proportioned to the distance between the inner and outer concentric boundary walls that no car can entirely move out of the path of all the car impelling members though such distance between the inner and outer bound-

ary walls is sufficient to permit one car passing the other.

5. An amusement device comprising a platform having an endless slot therein, a plurality of independent disconnected passenger carrying cars freely movable over the platform, spindles projecting upwardly through the slot and adapted to travel thereabout for impacting and propelling the cars in various directions, a driving cable for propelling said spindles around the slot, radially extending jaws upon the spindles adapted to receive the cable, and means for preventing the rotation of the spindles in the slot so that the jaws thereon always maintain their radially extending position.

6. An amusement device comprising a platform having an endless slot therein, a plurality of independent disconnected passenger carrying cars freely movable over the platform, spindles projecting upwardly through the slot and adapted to travel thereabout for impacting and propelling the cars in various directions, a driving cable extending around the underneath side of the platform for propelling the spindles around the slot, radially extending jaws upon the spindles adapted to receive the cable, and means secured to the spindles and rolling upon the platform and in the slot to constitute supports for the spindles and to prevent their rotation in the slot so that the jaws thereon always maintain their radially extending position.

7. An amusement device having a platform comprising a course, having a slot therein, inner and outer concentric walls bounding the course, a plurality of independent disconnected passenger carrying cars freely movable over the course, a plurality of spindles projecting upwardly through the slot and adapted to travel thereabout, pneumatically tired discs rotatably mounted upon the upper ends of the spindles adapted to constitute car impelling members, radially extending jaws upon the lower ends of the spindles underneath the platform, a driving cable extending through said jaws and adapted to propel the spindles around the slot, connecting rods extending between adjacent spindles for retaining them in their spaced apart relation, and truck members mounted upon the spindles and having their running wheels engaging the platform and the slot for constituting supports for the spindles and to prevent their rotation in the slot so that the jaws thereon always maintain their radially extending position.

8. An amusement device having a platform comprising a substantially ring-shaped course bounded by inner and outer concentric walls, a plurality of independent disconnected passenger carrying cars freely movable over the course, and a plurality of car impelling members adapted to travel around the course along separate concentric paths for impacting and impelling the cars in various directions thereon, the paths of travel of such car impelling members being so positioned in relation to one another and to the walls of the course that the cars cannot entirely move out of the paths of all of such car impelling members.

9. An amusement device having a horizontal flat platform comprising a substantially ring-shaped course bounded by inner and outer concentric walls, a plurality of independent disconnected passenger carrying cars freely movable over the course, and a plurality of car impelling members adapted to travel around the course along separate concentric paths for impacting and impelling the cars in various directions thereon, the paths of travel of such car impelling members being so positioned in relation to one another and to the walls of the course that the cars cannot entirely move out of the paths of all of such car impelling members.

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