A. W. JONES.

AMUSEMENT APPARATUS.

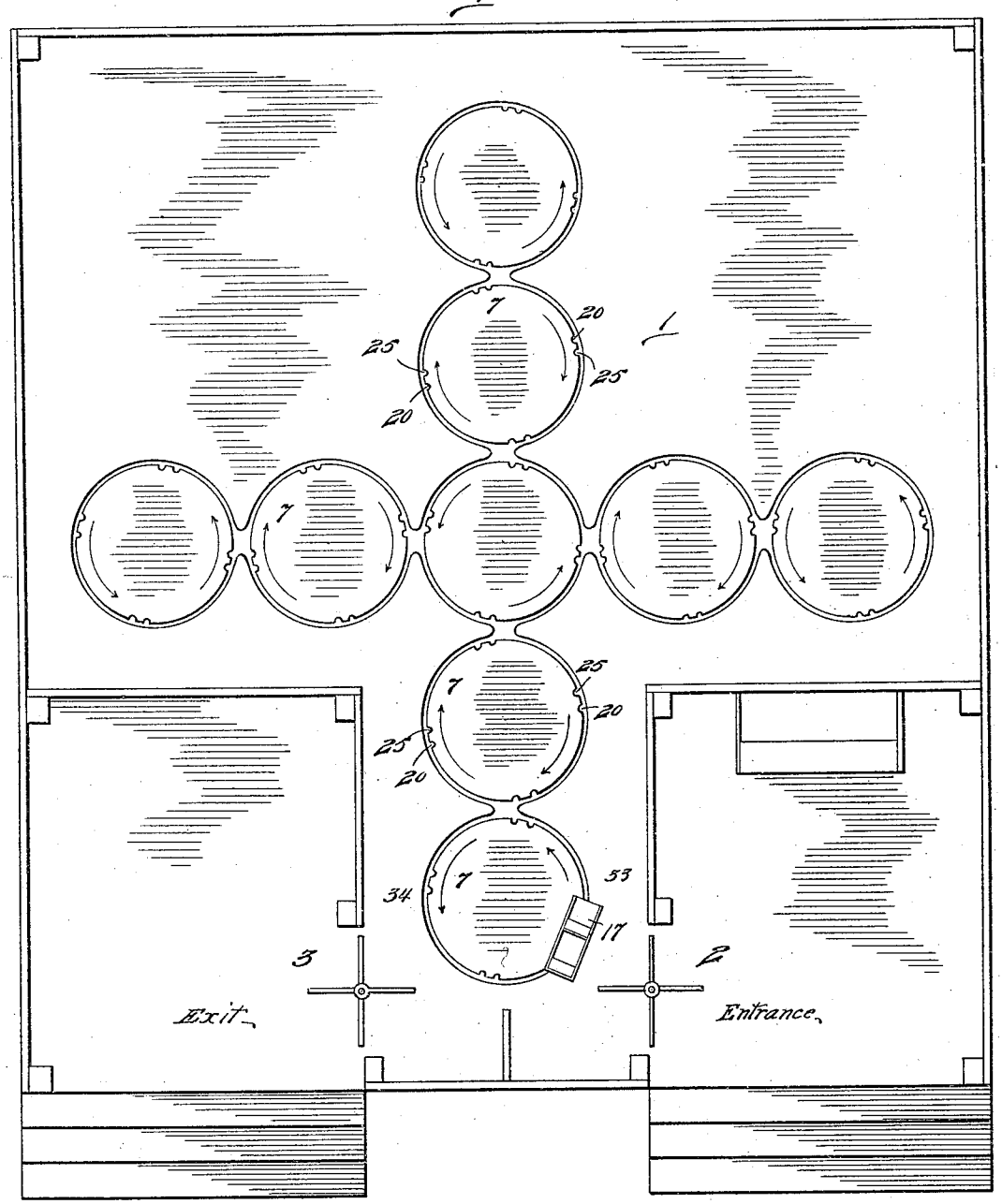
APPLICATION FILED MAR. 10, 1908.

946,730.

Patented Jan. 18, 1910.

4 SHEETS—SHEET 1.

Fig. 1.



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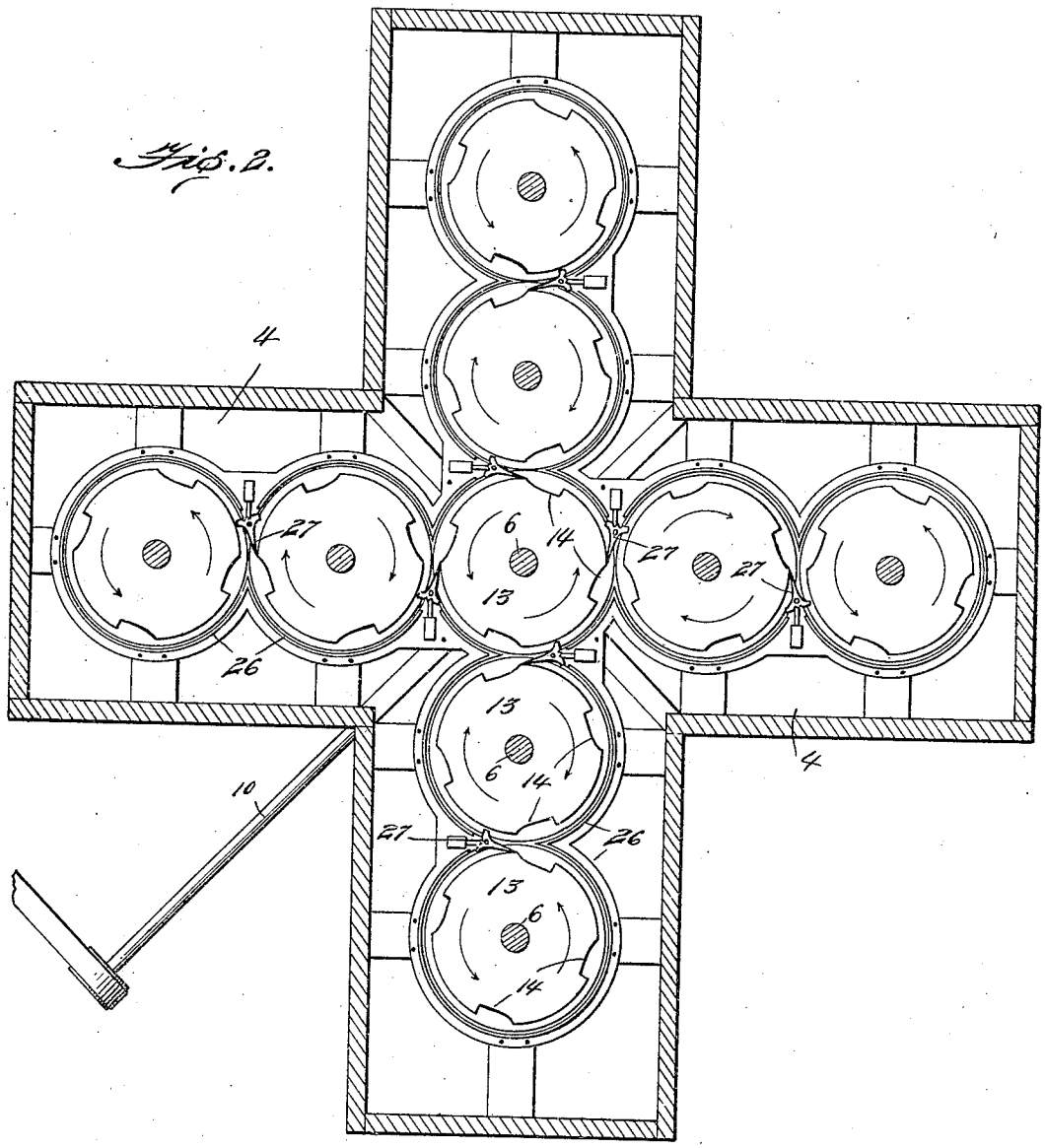
4 SHEETS—SHEET 2.

Fig. 2.



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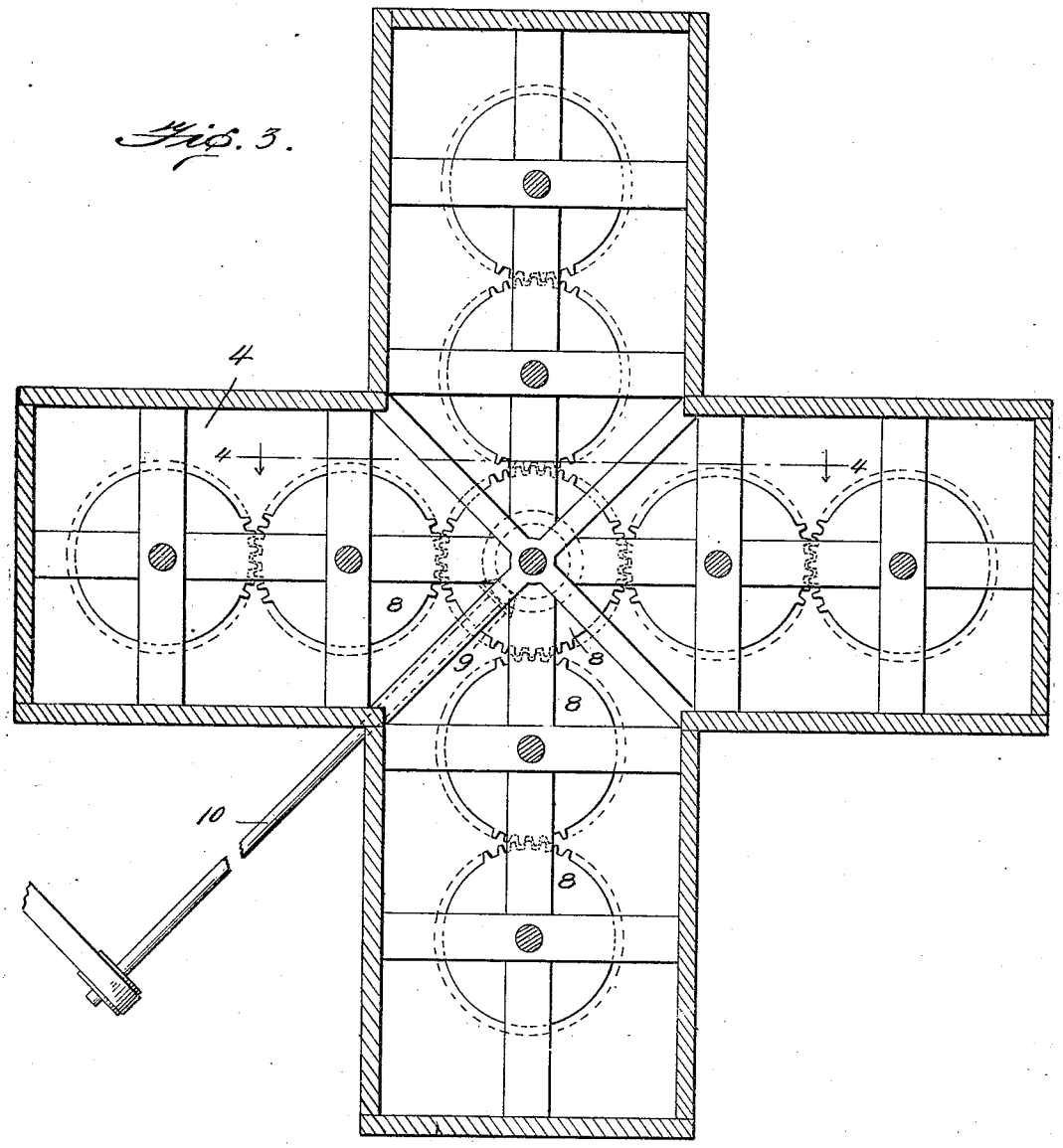
4 SHEETS—SHEET 3.

Fig. 3.



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4 SHEETS—SHEET 4.

Fig. 4.

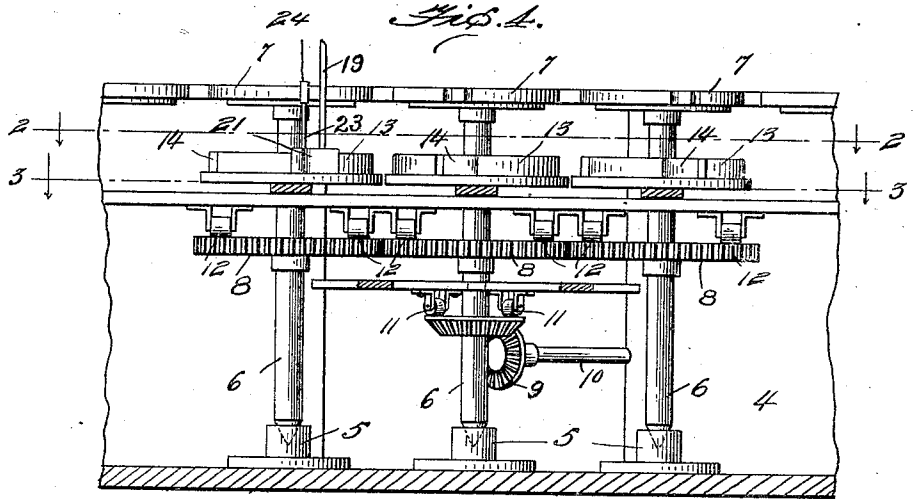


Fig. 5.

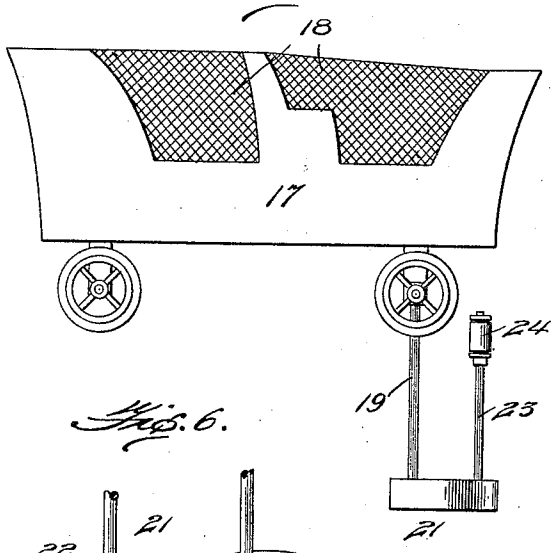


Fig. 6.

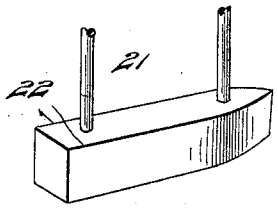
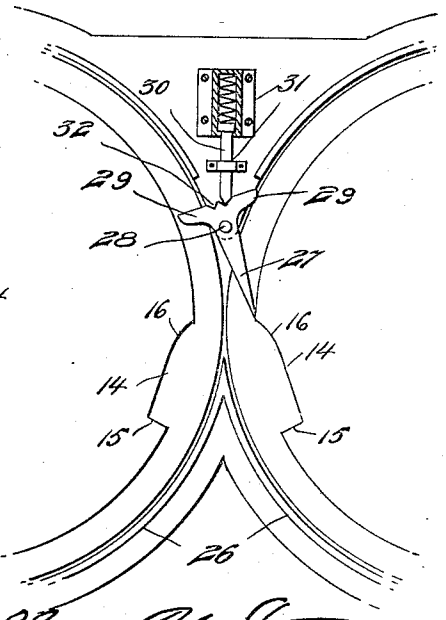


Fig. 7.



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UNITED STATES PATENT OFFICE.

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AMUSEMENT APPARATUS.

946,730. Specification of Letters Patent. Patented Jan. 18, 1910.

Application filed March 10, 1908. Serial No. 420,140.

To all whom it may concern:

Be it known that I, ALLEN W. JONES, a citizen of the United States, residing at South Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Amusement Apparatus, of which the following is a specification.

My invention relates to improvements in amusement apparatus and refers to a device of this character particularly adapted for amusement apparatus and the like devices, the object of the invention being the provision of means for imparting to a vehicle or like object a circulatory movement, causing the vehicle or other object to describe certain loops and curves, as in the shape of a figure eight, for instance.

Another object of the invention is the provision of means for propelling the vehicles or other objects and also to provide means for automatically shifting the vehicles or objects and causing them to travel in different directions.

A further object of the invention is the provision of an apparatus which when used for amusement purposes will be entertaining and amusing, and thoroughly practical and efficient in every respect.

My invention also has for its object the provision of a novel form of gearing or mechanical movement which may be adapted for different uses, such as for changeable exhibitors, display apparatus and the like.

The invention further consists of a mechanical movement apparatus embodying certain other novel features of construction, combination and arrangement of parts substantially as disclosed herein and as illustrated in the accompanying drawings, in which:

Figure 1 is a top plan of the invention as constituting an amusement apparatus. Fig. 2 is a horizontal section through the same on the line 2—2 of Fig. 4. Fig. 3 is a horizontal section on the line 3—3 of Fig. 4. Fig. 4 is a vertical section through the device. Fig. 5 is an elevation of one of the vehicles. Fig. 6 is a perspective view of the shunt member. Fig. 7 is a detail in plan on an enlarged scale of adjacent portions of two of the guide ways and the curved switch tongue.

In the drawings the invention is illustrated as in use for shifting a number of cars or vehicles in loop fashion, causing the vehicles to describe a series of curves and thus forming a novel and unique pleasure apparatus.

The numeral 1, designates the floor or platform of a building such as are common at pleasure resorts, and 2, and 3, the entrance and exit ways leading onto such floor. A pit 4, is provided beneath the floor which is of cruciform shape and in said pit are located the thrust bearings 5, which are spaced at equal distances apart. One of these bearings is located in the center of the pit and the other bearings are radially disposed with respect thereto. In the present instance, nine of these bearings are employed, but of course the number of these bearings would depend upon different requirements as to the size of the apparatus, et cetera, as five, thirteen, or any other different number of bearings could be used as well. Vertical shafts 6, are journaled and supported in the thrust bearings and carry on their upper ends the turn tables 7 which are set in and form a continuation of the floor. Intermeshing cog wheels 8, are mounted on the shafts and one of the shafts (usually and preferably the center one) constitutes the driving shaft and serves to convey motion to the other shafts. Power is transmitted to the driving shaft by means of the bevel gear and pinion connection 9, from the power shaft 10, as shown, or rotation may be imparted to the driving shaft by means of a belt, sprocket chain, cable, or the like power transmission device. When the bevel pinion drive is employed the rollers 11, bearing on the inner rim of the central cog wheel serve to counteract the lifting tendency of the bevel pinion. Friction rollers 12, support and guide the rims of the cog wheels and the circular floor sections or turn tables and serve to prevent lateral play. Impelling wheels 13, are also affixed upon the shafts, each having four oppositely disposed pockets or recesses 14, in the rim thereof, the pockets on the adjacent wheels being brought into registration or alinement as the wheels revolve. The pockets are each made with a rearward angular abutment wall 15, and the forward end of the pocket is of easy curvature as at 16. The wheels may have any other number of pockets than four according to the number of vehicles or objects to be shifted.

The wheeled vehicles 17, are preferably provided with rubber tires and the sides of

the vehicles or cars overhang the wheels so as to guard against accident. The alternate cars are designed to pass in opposite directions, so as a further safeguard, the opposing sides of the different cars may be screened as at 18, so as to prevent any interchange between passing cars. The forward axle of each car is swiveled by means of a king bolt or rod 19, which rod passes downward through alining or registering notches 20, in the opposing rims of the adjacent circular floor sections. An impact or shunt member 21, in the nature of an elongated tapering body having a widened rear end terminating in angular sides 22, has its rear end secured to the depending king bolt, and carried by the forward end of the impact member is an upstanding post 23, on which is journaled the roller 24, the roller being received in notches 25, in the rims of the floor sections, similar to the first notches 20. This shunt member or shoe is guided and held in the pocket in the impelling or propelling wheel by means of the annular guideway 26, surrounding the wheels. The shoe is thus in the nature of a shuttle, it being received in the pocket in the rim of the propelling wheel, so that as the wheel revolves, the shoe is carried forward, carrying with it the car, and as the shoe is turned, so the car is guided.

In order to give the cars a circuitous motion and transfer them from one propelling wheel to the other, switches are mounted between the adjoining wheels, which shift the cars from one wheel to the other, the switches being set by the passing car to direct the next following car in the opposite direction. The switches each comprise a pointedly curved switch tongue 27, which enters between the adjoining edges of the propelling wheels, the switch tongue being mounted on a pivot 28, and having lateral oppositely extending curved arms 29, in rear of its pivotal point. A spring pressed latch bolt 30, is slidably secured in brackets 31, in rear of each switch tongue, the pointed end of the latch engaging either one of the two notches 32, in the back of the switch tongue to hold the switch set in either direction.

The present apparatus is designed to keep sixteen cars in motion at once, but of course the number of cars would depend upon different requirements. The cars may be loaded with passengers at one particular point or at a number of different points, and in the present case the cars would preferably be boarded at the point 33. Power being applied, the wheels would commence to revolve in opposite directions. The first car would travel a quarter of a revolution of the first wheel and the first switch would then shift the car to the second wheel, where it would travel a half revolution of the second wheel and be shifted by the second switch onto the center wheel. The car would then travel a quarter revolution with the center wheel, be shifted onto the first wheel to the right, travel a half revolution with this wheel, make a complete circuit of the second wheel, half way around the first wheel to the right, back onto the center wheel for another quarter revolution, thence onto the wheels shown in the upper part of the different figures, and in like fashion around all the wheels back to the finishing point 34, on the first wheel, the direction of travel being indicated by the arrows. The shoe carried by the car passes the point of each switch and engages the angular arm in rear of the switch point, causing the switch point to turn on its pivotal center and setting the switch point so that the next succeeding car will be shifted in the opposite direction to that of the first car. In this way each succeeding car travels in an opposite direction to that of its predecessor.

The invention could be adapted for other purposes for shifting different objects, as for changeable signs and the like display or exhibition apparatus.

From the foregoing description taken in connection with the drawings, it will be evident that I have produced a practical and efficient form of gearing or mechanical movement which accomplishes all the objects herein aimed at in a satisfactory manner.

I claim:

1. Amusement apparatus, comprising a series of upright shafts, gears connecting the shafts in driving relation, driving or propelling wheels mounted on the shafts having pockets in the rims thereof, cars having front and rear axles, a rod depending from each front axle for turning the same, a shoe on the lower end of the rod adapted to be received in the pockets of the propelling wheels, annular guides for holding the shoes in the pockets, an upstanding post on each shoe, rotary floor sections provided with recesses in their edges, said recesses engaging the depending rods and upstanding posts, a roller carried by each post, and switches located between the propelling wheels for shifting the shoes from one propelling wheel to another.

2. An amusement device, comprising upright shafts, means for driving said shafts, propelling wheels on the shafts, said wheels having peripheral pockets with a forward curved portion and formed at the rear with an angular abutment, rotary floor sections carried by the shafts, cars, steering rods depending from the cars, shoes on the lower ends of the steering rods making engagement with the propelling wheels and coöperating with the pockets, upwardly extending posts on the forward ends of said shoes, said posts and steering rods being engaged

in recesses formed in the rotary floor sections, rollers on the upper ends of the posts, and means for shifting the shoes between the propelling wheels.

3. In an amusement device, a cruciform shaped pit, vertical shafts mounted therein, turntables carried by said shafts having recesses formed in their edges, intermeshing wheels carried by the shafts, impelling wheels secured to the shafts and extending in lines at right angles to each other, said impelling wheels having peripheral pockets with curved ends and angular abutment walls, means for driving said shafts, wheeled vehicles each having a rear axle and a forward axle with a rod depending therefrom having a shoe on its lower end, said rod being engaged by one of the recesses in the turntable, and switches coöperating with said pockets and constructed to guide said vehicles to cause them to pass in opposite directions.

4. In an amusement device, a pit of cruciform shape, thrust bearings in said pit equally spaced apart, one of said bearings being at the center and the others disposed radially with respect thereto, vertical shafts supported in the thrust bearings, turn tables carried by the upper ends of said shafts, said turn tables being set in and forming a continuation of the floor above said pit, means for transmitting motion from one of said shafts to the others, impelling wheels fixed upon said shafts, each having oppositely disposed recesses in their arms, each recess having a rear angular abutment wall and the forward end of the recess being of easy curvature, and wheeled vehicles carrying shunt members engaging the recesses.

5. In an amusement device, a pit of cruciform shape, thrust bearings in said pit equally spaced apart, one of said bearings being at the center and the others disposed radially with respect thereto, vertical shafts supported in the thrust bearings, turn tables carried by the upper ends of said shafts, said turn tables being set in and forming a continuation of the floor above said pit, means for transmitting motion from one of said shafts to the others, impelling wheels fixed upon said shafts, each having oppositely disposed recesses in their arms, each recess having a rear angular abutment wall and the forward end of the recess being of easy curvature, wheeled vehicles carrying shunt members, and annular guideways for guiding and holding the shunt members in the recesses of the impelling wheels.

6. In an amusement device, a pit of cruciform shape, thrust bearings in said pit equally spaced apart, one of said bearings being at the center and the others disposed radially with respect thereto, vertical shafts supported in the thrust bearings, turn tables carried by the upper ends of said shafts, said turn tables being set in and forming a continuation of the floor above said pit, means for transmitting motion from one of said shafts to the others, impelling wheels fixed upon said shafts, each having oppositely disposed recesses in their rims, each recess having rearward angular abutment walls and the forward end of the recess being of easy curvature, wheeled vehicles carrying shunt members, annular guideways for guiding and holding the shunt members in the recesses in the impelling wheels, and switches having curved switch tongues and laterally oppositely extending curved arms.

7. In an amusement device, a pit of cruciform shape, thrust bearings in said pit equally spaced apart, one of said bearings being at the center and the others disposed radially with respect thereto, vertical shafts supported in the thrust bearings, turn tables carried by the upper ends of said shafts, said turn tables being set in and forming a continuation of the floor above said pit, means for transmitting motion from one of said shafts to the others, impelling wheels fixed upon said shafts, each having oppositely disposed recesses in their rims, each recess having rearward angular abutment walls and the forward end of the recess being of easy curvature, wheeled vehicles carrying shunt members, annular guideways for guiding and holding the shunt members in the recesses in the impelling wheels, and switches having curved switch tongues and laterally oppositely extending curved arms, each switch having a plurality of notches in its rear face, and spring pressed latch bolts for coöperation with said notches.

In testimony whereof I affix my signature, in presence of two witnesses.

ALLEN W. JONES.

Witnesses:
J. W. MARTIN,
M. H. BUCH.