

A. W. JONES.

## DRIVING MECHANISM FOR ROUNDABOUTS.

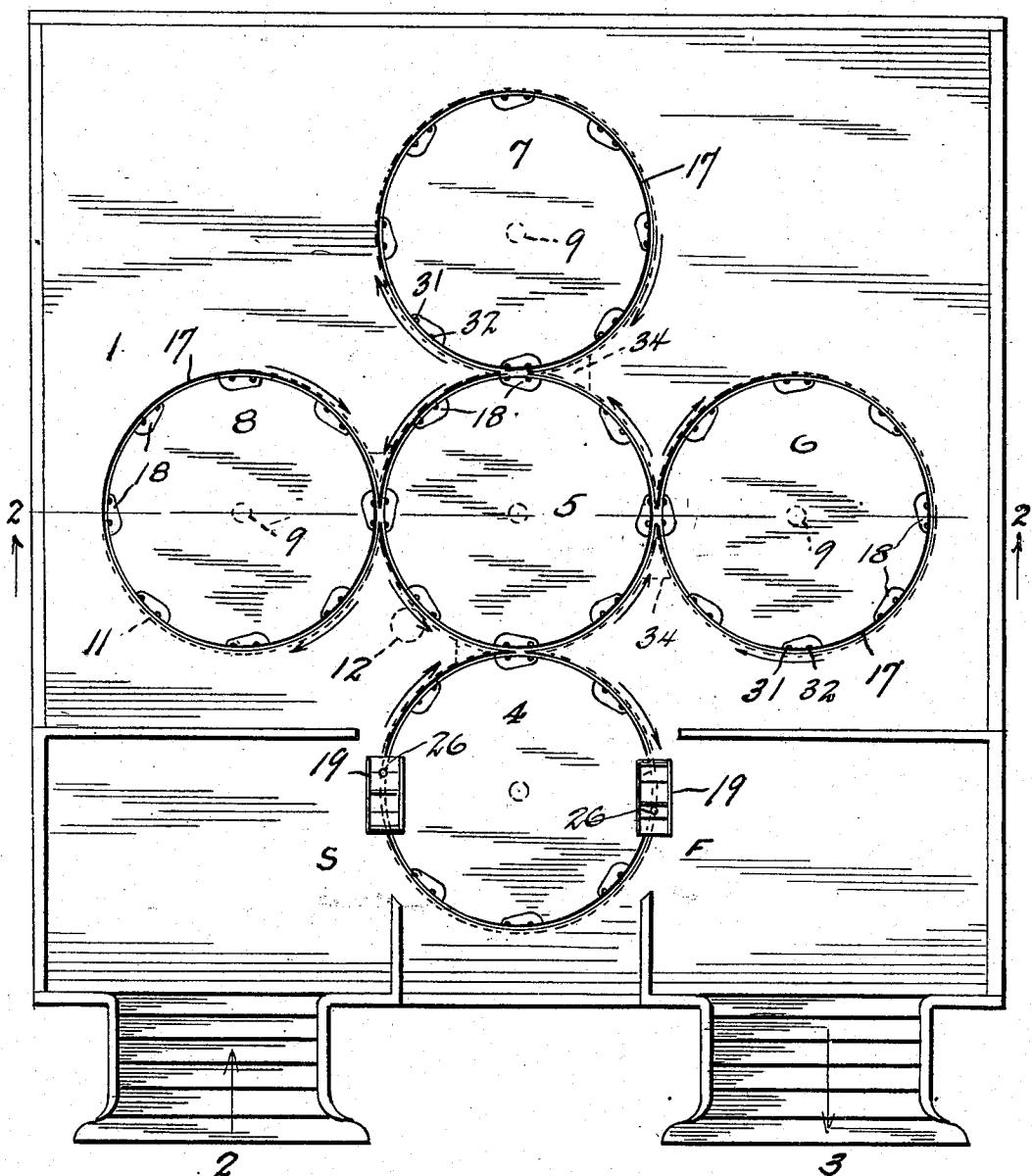
APPLICATION FILED FEB. 23, 1909.

937,531.

Patented Oct. 19, 1909.

2 SHEETS—SHEET 1.

FIG. 1.



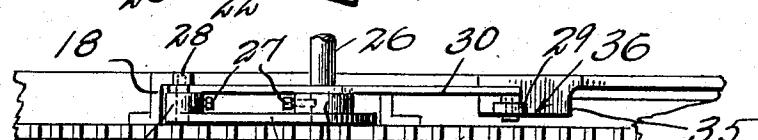
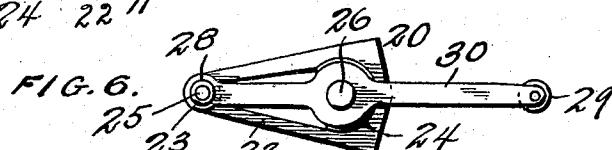
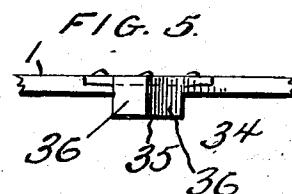
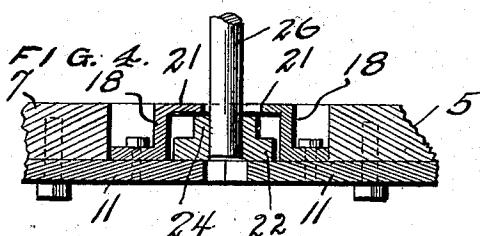
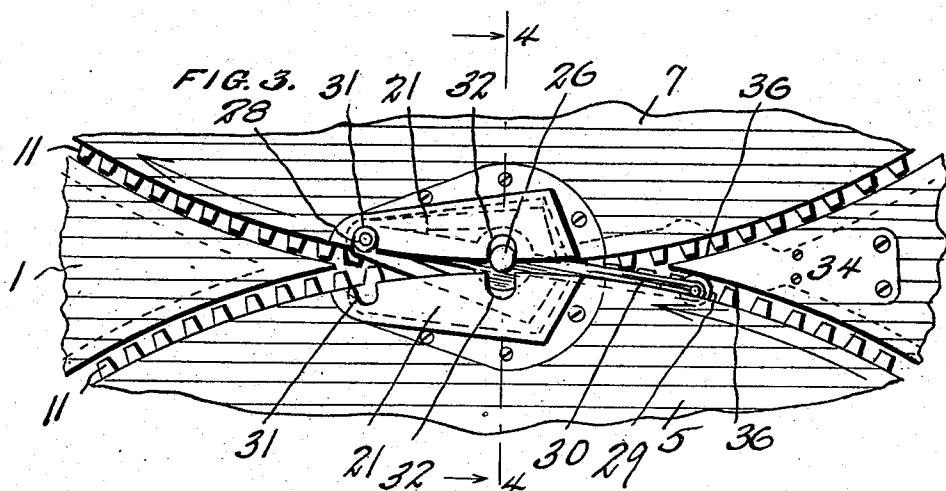
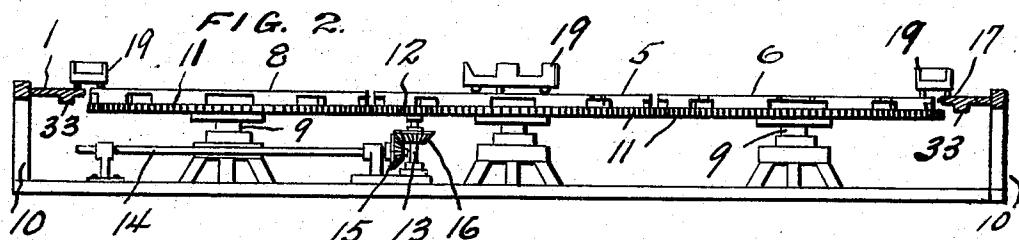
**WITNESSES**

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2 SHEETS—SHEET 2.



WITNESSES 23  
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# UNITED STATES PATENT OFFICE.

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## DRIVING MECHANISM FOR ROUNDABOUTS.

937,531.

Specification of Letters Patent. Patented Oct. 19, 1909.

Application filed February 23, 1909. Serial No. 479,525.

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 5 State of Nebraska, have invented certain new and useful Improvements in Driving Mechanism for Roundabouts, of which the following is a specification.

The present invention relates to improvements in driving mechanism for roundabouts, particularly as applied to amusement devices, and in this connection the mechanism may be utilized with advertising or sign exhibiting devices.

15 In the following specification I have illustrated the mechanism as applied to an amusement device in which a plurality of revoluble turntables are simultaneously rotated, and a vehicle or carriage is caused to 20 pursue a circuitous path around the periphery of these rotating turntables. In its course, the vehicle is guided through a series 25 of curves, loops, etc., beginning at a predetermined starting point, traversing the circuit or loop of each rotating member, and returning to a finishing point. In its career the moving vehicle is automatically switched 30 from one turning member to another, without interruption and is guided in a continuous movement from start to finish.

I have illustrated the turntables as of circular construction, but other outlines may be introduced if desired. In the use of circular turntables the vehicle is sometimes 35 caused to pursue a path in the lines of the figure 8, being transferred from one turntable to another by its automatic switch. One of the special features of the present device is the assurance that the vehicle will 40 not depart from its proper path of movement, nor be transferred at an improper point, thus avoiding accidents or collisions, as it will be understood that a number of vehicles or carriages are used. When 45 equipped with my novel features of construction the series of moving vehicles are permitted to cross and recross the path of movement with certainty, and in this manner a safe and reliable amusement device 50 is provided.

The invention consists in certain novel features of construction and combinations and arrangements of rotating members and vehicles carried thereby and means for transferring said vehicles from one member to

another, as will be more fully described and claimed hereinafter.

In the accompanying drawings I have illustrated one example of the physical embodiment of my invention according to the best mode I have so far devised for the practical application of the principles. I have illustrated four turntables, actuated from a master member, but it will be understood that the number may be increased by 65 extending the rotating members in the direction of the four points of the compass to any extent, within the power of the master turning member to rotate.

In the drawings, Figure 1 is a plan view 70 of an amusement device or "merry-go-round" constructed according to my invention. Fig. 2, is a side elevation of the device, the pit and platform being cut away on the line 2-2 of Fig. 1, and the front 75 turn-table and supporting mechanism being removed. Fig. 3 is an enlarged detail view of a portion of adjoining turntables, showing a vehicle impelling member in the act of transferring from one turntable to 80 another. Fig. 4 is a cross section of Fig. 3 on line 4-4. Fig. 5 is a face view of a switch. Fig. 6 is a plan view of one of the impelling members, and Fig. 7 illustrates an impelling member in side elevation, carried by one of the turntables and in the act of being transferred from one turntable to 85 another, as in Fig. 3.

In adapting my invention as an amusement or pleasure apparatus I usually employ 90 an elevated platform 1 having an entrance 2 thereto and an exit 3 therefrom. The turntables or rotating members 4, 5, 6, 7, 8, are preferably flush with the floor of the platform 1 and are supported upon vertical posts 95 or shafts 9, the platform being elevated as desired and supported by posts 10. Each of the turntables is provided with a rack wheel 11, secured at its underside, the teeth of the wheels being in mesh, and the master wheel 100 11 of the turntable 5, actuates the remaining wheels, as will be understood, imparting to them a reverse motion.

The master wheel is actuated by the pinion 12 which is mounted on an upright shaft 13, and shaft 13 is rotated from the counter shaft 14 through bevel gears 15 and 16. Shaft 14 may be revolved by suitable mechanism not shown. From this construction and arrangement of parts it will be evident 110

that the turntables are rotated from the master wheel in directions as illustrated by the arrows in Fig. 1. A series of circular openings 17 are provided in the platform, 5 in which the tables rotate, the openings being complementary to the tables and neatly surrounding them.

As illustrated in Fig. 1 each turntable is provided with eight metallic brackets, 18, 10 preferably countersunk and their tops flush with the floor of the turntables and platform. These brackets are spaced at regular intervals around the peripheries of the turntables in positions complementary to each 15 other, so that, as all the turntables revolve in unison due to their connection through the rack wheels, a bracket on each of two turntables is brought into close proximity.

If desired, a number of vehicles, as designated by the numeral 19, equal to the number of brackets 18 less the number of points of intersection of the various circular tracks, 20 may be employed, but the number may be varied within the aggregate, as will be understood.

The vehicles are operatively connected, each individually and independently, to the rotating turntables, by means of an impeller 20, in the form of a shoe, or shunt piece.

Referring particularly to Figs. 3 4 6 and 30 7 the construction and adaptation of the impeller 20 will be more readily understood. A number of these impellers, as great as, or less than the number of brackets 18 less the 35 number of points at which they are brought into proximity with each other may be employed to impel the series of carriages or vehicles. The impellers are situated in the pocket formed between the top portion 21 of the bracket 18 and the upper face of the 40 rack wheels attached to the underside of the turntables, the impeller resting on the rack wheel, and movable thereon, in manner to be described.

The impeller 20 is formed of a triangular shaped frame or base 22 which is provided with perforated bosses or lugs 23 and 24 at the respective front and rear ends in which are secured, respectively, the stud shafts 25 and 26, by means of set screws 27. The stud shaft 25 has journaled thereon an anti-friction roller 28, and a second anti-friction roller 29 is located at the rear end of the impeller, being mounted on a pin secured in 55 the plate 30 which is connected rigidly with the base 22 through the medium of the stud shafts.

The brackets 18 are each provided with a pair of semi-circular openings 31 and 32 60 cut into the edge of the top flange 21, to accommodate the roller 28 and shaft 26 respectively. In assembling the parts the impeller is first placed upon the exposed face of the rack wheel and then the bracket 18 is 65 bolted thereto, the semi-circular openings

accommodating themselves to the roller and shaft.

The anti-friction roller 28 extends upwardly about flush with the surface of the platform and turntables, but the stud shaft 26 is prolonged and extends sufficiently high to afford a pivotal bearing for the vehicle 19 which is attached thereto and adapted to swing laterally thereon. With the parts thus assembled the master wheel is actuated as described, 75 imparting a reverse circular motion to the series of turntables. The turntables carry the impellers which are held in the pockets as described, and the impellers impel the vehicles forward. A ledge or rib 33 may be 80 placed at the underside of the platform to prevent actual displacement of the impeller, but must be located a sufficient distance from the turntables to allow the passage of the roller 29 and the rear end of the base 22 85 which projects laterally into the slot 17.

The vehicle is transferred from one turntable to another by means of a stationary switch, indicated at 34, there being four switches shown in dotted lines Fig. 1. These 90 switches are essentially metallic wedge shaped pieces secured to the platform and provided with a downwardly projecting portion 35 formed with two inclined faces 36. The projecting portion 35 is elevated so that 95 the base 22 may clear it, but is in the path of movement of the antifriction roller 29 at the rear of the impeller and the roller contacts therewith in passing.

An inspection of Fig. 3 will disclose the 100 fact that the impeller illustrated therein has been carried by the rotation of the turntable 5 to its present position and the impeller is being transferred to the turntable 7. The contact of the wheel or roller 29 has swung 105 the impeller, on the shaft 26 as a pivot, and the roller 28 has left the opening 31 of the bracket on turntable 5 and moved into the complementary opening in the bracket on 110 table 7. It being remembered that the two tables are rotating in unison it will be apparent that the impeller will now be carried by the table 7 and the shaft 26 will glide in the direction of the arrow on turntable 7. By reference to Fig. 1 it will be apparent that 115 this switching or transferring movement will take place again at the opposite side of the switch 34 after the vehicle has traversed the outline of the turntable 7 and is returning. The operation of all other switches is similar 120 to that just described.

Now assuming the start to be made at point S, Fig. 1, the vehicle 19 travels around table 4 to the right, is transferred to table 5 and moves around through an arc of ninety degrees; is switched to table 6 and makes the entire loop thereabout; is switched to table 5 and traverses an arc of ninety degrees, transfers to table 7 and makes a complete turn; is switched again to table 5 and 125 130

after traversing a curve of ninety degrees thereon is switched to table 8 around which it passes and is transferred to the master table again and traverses the remaining 5 ninety degrees of its outline where it is again shifted to table 4 and returns to the finishing point F; the vehicle is then emptied and brought around to the starting point for another load of passengers, and 10 has made a complete circuit of the turntables.

When it is remembered that the apparatus accommodates a number of vehicles, it will be understood that the carriages travel in a 15 stream or string, and the independent vehicles cross and recross the path of the moving cars, apparently cutting off each other and affording a degree of excitement, but with absolute safety, because of the presence of 20 the positively operating mechanism. The apparatus thus affords an exhilarating and novel sport which is altogether pleasant and safe.

As before stated, the number of turntables may be increased, within the limits 25 of the power of the master wheel, and inferentially the number of vehicles may be increased accordingly.

Having thus fully described my invention, 30 what I claim as new and desire to secure by Letters Patent is:

1. The combination with a series of rotatable members and a master member suitably actuated, of a plurality of vehicles, an 35 impeller connecting each vehicle with a rotatable member, and means for shifting each vehicle from one rotatable member to another, said means comprising an immovable switch and a supplemental roller adapted to 40 contact therewith.

2. The combination with a series of turntables and a master turntable suitably actuated, of a vehicle, an impeller connecting the vehicle with the turntables, and means 45 for transferring said vehicles from one to another of said turntables, said means comprising an immovable switch-like projection and a friction roller adapted to contact therewith.

50 3. The combination with a series of rotatable members and a plurality of impellers carried thereby, of transfer abutments located adjacent said members in pairs, and means carried by a lever extension on the impeller to co-act with said abutment for shifting the impeller from one member to another.

55 4. The combination with a series of rotatable members moving in reverse directions

and a plurality of impellers carried thereby, 60 of a wedge shaped abutment located between pairs of said members, and means carried by a lever extension on said impellers to co-act with said abutment for transferring the former from one member to another. 65

5. The combination with a series of rotating members moving in reverse directions and a plurality of impellers carried thereby, 70 of a wedge shaped abutment located between pairs of said members, and an anti-friction roller carried by a lever extension on each impeller to co-act with said abutment for transferring the impeller from one member to another.

6. The combination with a series of turntables moving in opposite directions and having brackets and pockets as described, of a plurality of impellers located in said 75 pockets, stationary abutments located between pairs of turntables, and means carried by a rearwardly projecting lever arm on the impellers to co-act with said abutments for shifting the impellers from one turntable to another.

7. The combination with a series of turntables moving in opposite directions and provided with recessed brackets and pockets as described, of a plurality of impellers located in the pockets and retained by the recesses in the brackets, stationary abutments 90 located between pairs of turntables, and anti-friction rollers carried by lever arm extensions on the impellers to co-act with said abutments for transferring said impellers from one turntable to another. 95

8. In an amusement device, the combination with a central gear wheel bearing a turntable, said turntable having a series of peripheral recesses formed therein, brackets located over said recesses and formed with 100 semi-circular openings in their outer edge, of a series of similarly constructed and equipped wheels located around and intermeshing with said central wheel, means connected to said central wheel for rotating the 105 turntables, wedge shaped impellers retained in and moved by said recesses and brackets, abutments located between the turntables, and means carried by extensions on the impellers engaging the abutments and fulcrumming against the brackets for shifting said impellers from one turntable to another. 110

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

ALLEN W. JONES.

Witnesses:

HENRY C. MURPHY,  
MATTHEW MALONE.